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ULTRALIGHT AIRCRAFT TECHNOLOGY AND PUBLIC SAFETY

HEARING

BEFORE THE

SUBCOMMITTEE ON TRANSPORTATION, AVIATION AND MATERIALS

OF THE

COMMITTEE ON SCIENCE AND TECHNOLOGY U.S. HOUSE OF REPRESENTATIVES

NINETY-EIGHTH CONGRESS

SECOND SESSION

MAY 21, 1984

[No. 111]

Printed for the use of the
Committee on Science and Technology

U.S. GOVERNMENT PRINTING OFFICE

38-948 O WASHINGTON : 1984

H701-81

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ULTRALIGHT AIRCRAFT TECHNOLOGY AND PUBLIC SAFETY

MONDAY, MAY 21, 1984

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE AND TECHNOLOGY,
SUBCOMMITTEE ON TRANSPORTATION,
AVIATION AND MATERIALS
Washington, DC.

The subcommittee met, pursuant to call, at 1:30 p.m., in room 2325, Rayburn House Office Building, Hon. Dan Glickman (chairman of the subcommittee) presiding.

[The prepared opening statement of Mr. Glickman follows:]

OPENING STATEMENT OF HON. DAN GLICKMAN, CHAIRMAN, SUBCOMMITTEE ON TRANSPORTATION, AVIATION AND MATERIALS

Today the Subcommittee on Transportation, Aviation and Materials will turn its attention to an examination of ultralight aircraft—one of the most innovative and certainly the fastest growing new technologies to ever come along in the long history of aviation.

First seen in the mid-seventies, ultralights have rapidly taken hold as a popular new form of sport and recreation. Just in the past five years, the number of units has rocketed from a few hundred to an estimated 40,000 today.

Part of the reason for this popularity is the fact that regulation (for safety or other purposes) was nonexistent at first and even now is extremely limited. Pilot licenses, for example, are not needed. Furthermore, ultralight manufacturers are not required to prove that their products are safe as other airplane builders are, a factor that has kept costs down and led to enhanced appeal of ultralights.

At the same time, such freedom from regulation is a cause for concern. Not only have numerous accidents occurred, apparently due to lack of pilot training or because of structural inadequacies, but mixing ultralights with other traffic in the national airspace clearly constitutes a hazard.

The FAA, for its part, recently promulgated regulations to define what ultralights are and to keep them separated from other traffic. But without licensing, there is no way to assure that pilots know about these restrictions.

The industry has made some commendable efforts at self regulation. But these are limited in terms of the number they reach and also because they are voluntary.

So, the question arises—are such efforts enough? Or is some more extensive form of federal regulation needed? And if so, can this be done without ruining a very popular activity?

I don't know the answers. At this point I have an open mind. I want to hear what each of our witnesses today has to say. Hopefully, with their help, we can all see the issues more clearly and begin to determine what, if anything needs to be done.

Mr. GLICKMAN. Good afternoon. Today the Subcommittee on Transportation, Aviation and Materials will turn its attention to an examination of ultralight aircraft—one of the most innovative and certainly the fastest growing new technologies to ever come along in the long history of aviation.

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I don't know the answers. At this point I have an open mind. I want to hear what each of our witnesses today has to say. Hopefully, with their help, we can all see the issues more clearly and begin to determine what, if anything needs to be done.

I think Mr. Carney may have a statement. If any members do have a statement, they can be included immediately following mine.

It is a privilege today to have for our first witness Admiral Don Engen, U.S. Navy Retired, Administrator of the Federal Aviation Administration. We appreciate that you are here and you may proceed as you wish.

STATEMENT OF VADM. DONALD D. ENGEN, USN (RETIRED), ADMINISTRATOR, FEDERAL AVIATION ADMINISTRATION, ACCOMPANIED BY EDWARD FABERMAN, OFFICE OF THE CHIEF COUNSEL; BERNARD GEIER, OFFICE OF FLIGHT OPERATIONS; AND KEITH POTTS, AIR TRAFFIC SERVICE

Mr. ENGEN. Thank you, Mr. Chairman.

I would like to introduce on my left, Mr. Ed Faberman, General Counsel; on my right, Bernie Geier, Flight Standards, and Mr. Keith Potts, from Air Traffic Systems. While I will do most of the talking I want to give them an opportunity to sit here with me.

Although this marks my first appearance before this subcommittee, I am well aware of the subcommittee's dedication to the task of promoting aviation safety, and of the fine, professional working relationship between the subcommittee and the FAA. You may be assured that I am committed not only to continuing that cooperative working relationship but to working with you to make it even stronger and better.

I welcome the subcommittee's interest today, in looking to ultralights. This relatively new segment of the aviation community has presented us with the novel opportunity to try to develop a framework which applies the regulatory powers of the FAA where necessary for safety, yet provides both the opportunity and incentive for the private sector to help in promoting a safe ultralight industry. Let me take a few moments to explain.

Ultralights are a relatively new phenomenon, having been introduced in the United States in the mid-1970's. In a short span of time and as people experimented, what started out as very simple hang gliders became increasingly more sophisticated powered hang gliders and ultralights, with great capabilities and range. As more ultralights came into use, the FAA began to receive reports of sightings of these vehicles in controlled airspace, and of operations over congested areas and spectators. The potential for compromising safety was becoming increasingly apparent, and the FAA concluded that regulatory action was needed to offer greater protection to other airspace users and to persons on the ground.

Fundamental to the FAA's approach to regulating ultralights, and based on strong sentiment from the ultralight community, were two basic tenets:

First, since ultralights were primarily used for sport or recreational purposes, the thrust of FAA's regulatory efforts would be to preserve the capability of persons to enjoy their recreational activity by taking the minimum number of regulatory actions necessary for safety; and

Second, the private sector would be encouraged to play an important role in self-regulation and policing of the industry to promote further advances in safety.

Applying these principles, the FAA proposed the institution of rules governing ultralight operations in July 1981. After analysis of about 2,500 comments from the public, the FAA promulgated final rules of ultralights, accommodating disparate views in a new part 103 of the Federal Aviation Regulations, effective on October 4, 1982.

Under part 103, a powered hang glider is considered to be an ultralight if it weighs less than 254 pounds, is limited to carrying 5 U.S. gallons of fuel, has a maximum speed of 55 knots, and a power-off stall speed of not more than 24 knots.

Further, the vehicle may not possess an airworthiness certificate, must be limited to a single occupant, and may be used for recreation or sport purposes only. Any vehicles failing to meet any of these criteria are considered aircraft for purposes of airworthiness certification, airman certification, and registration. Any vehicle registered as an aircraft cannot be flown interchangeably as an ultralight and vice versa.

The weight, speed, and fuel limitations are intended to minimize the potential hazards in case of an accidental impact. The low flying speeds enable ultralights to operate from surfaces other than those designed for aircraft, thus lessening the potential for interference with aircraft operations. Restricting the vehicle to a single occupant recognizes that an individual engaging in a sport activity may accept the risks of doing so for himself, but should not be able to do so for others.

An individual who elects to operate an ultralight without pilot qualifications should be assumed to do so with an awareness of the risks involved. On the other hand, a passenger from the general public may well assume that the vehicle operator holds certification as a pilot, and thus not be in a position to make an informed decision about risks involved in flying with an uncertificated individual in an ultralight.

Part 103 also prescribes a number of operational requirements for ultralight operators. For example, in the same manner that FAA rules govern aircraft operators, ultralight operators are barred from engaging in any hazardous activity which jeopardizes the safety of persons or property on the ground or in the air. Their hours of operation are limited to provide greater see and avoid capabilities for aircraft operators: in controlled airspace, ultralights may operate only during the period from sunrise to sunset. In uncontrolled airspace, they may operate during the twilight period, provided they have installed an anticollision light.

Ultralight operators are required to yield the right of way to aircraft, and are prohibited from operating over congested areas. Ultralight operators may not operate within an airport traffic area, control zone, terminal control zone, or positive control area, unless the operator has received prior authorization from the air traffic control facility having jurisdiction over that airspace.

Ultralights must also be operated by visual reference to the surface of the Earth, thus assuring that an ultralight can descend and land safely at any time without entering obscured weather conditions which can cause spatial disorientation. Flight visibility and cloud clearance requirements are the same as those imposed for visual flight rules flight operations by fixed wing aircraft.

As I mentioned earlier, part 103 is designed to place minimum constraints on ultralights operators while increasing the safety of their operations with respect to others in the air or on the ground. The vehicular and operational limitations imposed upon ultralights are such that the sport and recreational aspects of their use are little diminished, yet added protection has been ensured for others by the regulatory frame work.

I also mentioned that the FAA had intended to foster self-regulation and policing within the industry to add to the safety offered by our regulations. Since industry representatives are here today, I would prefer to let them offer detailed explanation of their efforts in the area of pilot training, design, working with local communities, and marking of aircraft. As keepers of the aviation regulations, the FAA needs to continue to evaluate these efforts to see if they will meet future safety needs. We are just 20 months into use of part 103.

As the members of the subcommittee know, I was not Administrator of the FAA when part 103 was conceived or promulgated. I have, however, flown an ultralight and participated in the evolution of their use. My view of this rule is that it addresses the issues involved for the purpose of sport flying. It permits the continued enjoyment of a recreational activity without the adverse impacts of unwarranted regulatory burdens.

At the same time, it does prescribe reasonable limitations on the operation of these vehicles to provide an acceptable level of safety

to the operator and to others. My view of the regulation of ultralights is to continue on as specified in part 103, working closely with the entire aviation community and urging the ultralight community to continue efforts to further improve safety. We should consider such changes in the future as may be proposed by the aviation community or indicated by operational experience.

Have we done everything we will need to do to regulate ultralights?

I can't answer that. Probably not. On the other hand, the FAA made it clear in the preamble to part 103 that future regulatory action may be taken by the FAA as circumstances dictate. It is my view that changes for part 103 should be based on operational experience and be proposed by the aviation community from within.

I have the same potential safety concerns that others might have, including very likely some members of this subcommittee. For example, even though substantial strides are being made by the aviation community with our support, is there more which should be done to assure that ultralight pilots are adequately informed of the obligations imposed upon them by our regulations and by commonsense? Does what we have done go far enough to minimize intrusions of ultralights into unauthorized airspace?

Because of geographical and other unique characteristics of individual airports, we have not prescribed procedures to be used by ultralights at uncontrolled airports, leaving the individual solutions over the manner in which ultralights will mix with other traffic to be worked out on a local basis between airport operators and the ultralight community. Since parachuting operations are already conducted around uncontrolled airports without significant problems, we believe ultralight operations are similarly acceptable from a safety standpoint.

Further, I should add that we have been encouraging separate landing strips to be made available at these airports for ultralight use so they will be taken out of the normal stream of traffic. Moreover, we encourage the establishment of separate flight parks for ultralights. Are these actions enough?

I am still not sure. Therefore, I intend to watch this area closely to fully assure myself that adequate measures have been taken to reduce the possibility of incidents between ultralights and conventional aircraft, particularly if there is a continued growth in the number of ultralights. I should note that we have seen some progress, though I would like to see some more initiatives, on the part of States and local communities in terms of establishing flight parks for ultralights.

For example, San Diego County has established a flight park for ultralights on county land which already provided recreational use for off the road vehicles.

Texas has helped to facilitate the establishment of flight parks within the State by recognizing the recreational rather than industrial nature of ultralight flight parks.

In Virginia, the Aeronautics Commission testified in behalf of a prospective flight park operator before a local zoning commission.

Another area of continuing interest to me is whether adequate vigilance and oversight will be exercised within the industry over the design and construction of ultralights and whether there will

be adequate standardization, or whether this will be an area where the FAA will need to reconsider its approach in the future.

In short, Mr. Chairman, I am satisfied with our regulatory progress up to this time. But I, too, have questions which are not yet answerable given our limited operational experience under part 103. I intend to satisfy myself that we have done enough, but that will take more time and added operational experience. I can assure you I will monitor closely our progress under part 103, and that the FAA will take whatever future actions may be necessary in the interest of safety.

In this respect, Mr. Chairman, I would welcome any observations the subcommittee may have concerning ultralights, and look forward to reviewing what is said before the subcommittee.

That completes my prepared statement, Mr. Chairman. I would be pleased to respond to any questions you may have at this time.

Mr. GLICKMAN. Thank you, Admiral.

On page 4 you describe under your part 103 a number of operational requirements for ultralight operators. You talk about controlled versus uncontrolled airspace. You talked about when airplanes can fly in a variety of operational matters. I guess one thing that concerns me is that there is no way to assure that pilots know about these rules, because they are not licensed by anybody. You have promulgated some rules, but I am not sure that the knowledge of those rules is going to get to anybody's mind because there is no requirement they learn about them or know about them.

Mr. ENGEN. Well, that is a good statement. We have done a number of things in which we have tried to address this. We have gone about it in a number of different ways. First, we have encouraged the community itself through part 103 self-regulatory functions to educate and train pilots and I have, just recently, reviewed one manufacturer's handbook which spells out these things.

We also published two advisory circulars to the community providing information on these points and we have provided it to ultralight operators and have distributed these advisory circulars very widely. We have published an article in ultralight use of airspace in our own General Aviation News and reproduced 50,000 copies of this article, which we have passed out to the public.

We have accident prevention specialists throughout the country—and this is probably our strongest area, I think, Mr. Chairman—in that we are out there monitoring, we are aware generally of what is going on and my accident prevention specialists have been out talking to most in the ultralight community. These are the same ones who do the general aviation accidents as well as they interface with the general aviation public. They go around to the ultralights operating areas.

Those persons operating at airports must receive permission before the airport can grant them clearance in which to fly, which assures also that there is a reference to part 103 and the operators understand what the airport proprietor wants before they give approval to fly.

In short, I think that we do have a lot of surveillance out there. I can't give you in hard numbers how effective this has been, but I do think as we go on and complete the 2 years that we are going to operate under 103, that this is going to become more clear to us.

Mr. GLICKMAN. Again, I make the point that the reading of information from the FAA is voluntary under your set of circumstances and so it just is based upon either the good will of the community or the diligence on behalf of the particular pilot, and I guess it causes me some concern that there are vehicles flying around in both controlled and noncontrolled airspace that may or may not comply with what you have talked about here, and there is no way to force them to at least know what the rules are if they don't want to become involved in the process.

Mr. ENGEN. One way that might show how effective we have been, Mr. Chairman, has been that we have taken action against people. There has been action taken against some ultralight operators. You can't be everywhere at one time. Where we do see infractions we have pursued the individuals and taken those actions appropriate.

Mr. GLICKMAN. How many actions have you taken in the area of ultralights?

Mr. ENGEN. I am going to say about 40. I will supply the exact number.

Mr. GLICKMAN. Would you?

Mr. ENGEN. Yes sir.

[The information follows:]

SUMMARY OF ENFORCEMENT ACTIVITY FOR ULTRALIGHT OPERATORS SINCE OCTOBER 8, 1982, THE EFFECTIVE DATE OF FAR 103

There have been a total of 62 enforcement cases opened against ultralight operators for violations of various sections of Part 103.

There have been 23 cases closed with a civil penalty averaging $200.

Approximately 28 cases have been closed under administrative action, warnings, etc. The remainer remain open with action in progress.

Two cases where the operator was alleged to have been engaged in commercial operations have been turned over to the U.S. attorney. In one of these cases the U.S. attorney's complaint requests $30,000 in fines for a series of particularly hazardous operations over a congested area.

Mr. GLICKMAN. Now, there is no question that you classify an ultralight as an airplane?

Mr. ENGEN. It is a vehicle.

Mr. GLICKMAN. It is a vehicle that flies in the air. But the reason why I say so, is because you talk about well, we have had some success with parachutes and we haven't had any serious problems with parachutes. I am not sure an ultralight is a parachute. You can't say they are the same.

Mr. ENGEN. That is another sport vehicle really. It is a sport, that is I draw that parallel.

Mr. GLICKMAN. An ultralight is a vehicle that usually is propelled by an engine, is it not, as opposed to a hang glider?

Mr. ENGEN. A hang glider is also an ultralight.

Mr. GLICKMAN. It is an ultralight?

Mr. ENGEN. It was classed as such when 103 was brought out. Prior to that time, a powered hang glider was an ultralight.

Mr. GLICKMAN. How many ultralights do we have in this country now?

Mr. ENGEN. I think you are going to get as you ask that of different people here, you may get different answers. My view, operating

today in the United States, there is somewhere between 15,000 and 18,000 ultralights of all types and categories.

Mr. GLICKMAN. That would include both hang gliders as well as planes. Like I have this magazine, Ultralight, and they have a picture of one here called the Lazair, which looks like basically an Orville or Wilber Wright type of airplane, so there is all types and categories. I wonder at the time if the Wright airplane would have been categorized as an ultralight?

Mr. ENGEN. It is a little too heavy, over 254 pounds. I can't give you the exact weight.

Mr. GLICKMAN. If they had cut the weight down it would have been an ultralight?

Mr. ENGEN. As long as it was a single seater it would have been, yes.

Mr. GLICKMAN. Let me ask you this. Have you given any thought to the options for further regulation should it be needed? For example, are there levels of regulations that could be imposed that are short of full blown pilot licensing and airworthiness certification?

Mr. ENGEN. I think if we go down any further into this we get into the certification role and I like to think that 103 provides the guidance necessary to safely operate the ultralights for all the reasons that I have said. It is my personal opinion that it is not necessary at this point in time to go to full blown pilot licensing, although I think I would like to leave the options open because I do want to review FAR 103 in October of this year. We are going to review everything that has transpired. When we set out 103 we said we would do it within 24 months.

Mr. GLICKMAN. What is your view of the overlapping and contradictory set of State regulations?

Mr. ENGEN. Wherever we meet contradictory licensing or regulations we in each individual case, meet with those people. FAA has the overall umbrella. We make sure that people have the right to operate, that the rules have been followed, and that State rules don't abrogate the right under FAR 103.

Mr. GLICKMAN. For example, I am looking through, I guess this is Ultralight Pilot, and November-December 1983 there are several states—Illinois, Indiana, Louisiana, Montana, New Mexico, North Dakota, Ohio, Oregon, South Dakota, Virginia, and Wisconsin that require vehicle registration. Some of these same States require pilot registration. There are ultralight landing site airport registrations that are different in each one of these states.

There are a whole variety of separate circumstances that are not applicable for a larger airplane, which you have pretty much preempted the field, and I guess what concerns me is on the one hand the Feds aren't taking a role, at least a mandatory role in licensing procedure, and the States seem to be taking a rather aggressive and diverse role, not a consistent role in the same thing. I wonder if this is going to cause more confusion out there in terms of a variety of safety issues?

Mr. ENGEN. Well, I would like to think that it will not cause more confusion, Mr. Chairman. We certainly don't want that to occur. I think we have taken the position that States can legislate in the aviation area for revenue producing purposes. Some States

require airmen to register with the State and pay a small fee. Although we have not done anything like this in the area of registration, I think that individual States may have done this.

In each case, though I want you to know that we are working with those State communities and we do maintain the overall umbrella of Federal regulations. In no case are our regulations, which are there for standardization purposes, not prevailing.

Mr. GLICKMAN. Well, let me ask you this. How high can these airplanes fly?

Mr. ENGEN. They are limited only by the power available and the normally aspirated engines. I would imagine that they could go on occasion to 12,000 feet, perhaps more.

Mr. GLICKMAN. So, where are your levels of controlled airspace in the air traffic control system?

Mr. ENGEN. You know anytime you get above 10,000 feet you are going to poke into our control area. That is then an infraction of FAR 103 without prior approval. We expect whenever an ultralight operates in a positive, in a controlled zone, whether that be a national control zone or local control zone, that they receive prior approval and in this case, we think they would have to come to the FAA and ask them. Anytime they want to fly from the ground up to 8,000 feet, there is no problem as long as they are in the uncontrolled airspace.

Mr. GLICKMAN. But they don't have to register their airplanes, and don't have to register their flight plans, so they are doing this on a volunteer basis.

Mr. ENGEN. Neither does a pilot of a fixed wing airplane. He has to register his airplane, but he doesn't have to file a flight plan.

Mr. GLICKMAN. I am thinking about some of these very busy airports like Van Nuys Airport in California and others. Who decides? Does the airport retain decision as to whether they are going to let these things fly in there or not?

Mr. ENGEN. In every case where there is a dispute we get in there and talk. Ultralights are designed to fly in uncontrolled airspace and they are not designed to get on the busy runway, and in every case where we have adjudicated the use of ultralights, we have found that the operators, ultralight operator and airport operator have designed separate patterns which are not in conflict with normal traffic patterns.

Mr. GLICKMAN. What happens if an ultralight operator violates one of your rules? What can you do to him?

Mr. ENGEN. We can take him to court on civil action.

Mr. GLICKMAN. That means going to a Federal district court, doesn't it? You are not going to file an action in the U.S. District Court everytime an ultralight operator goes into a controlled airspace, are you?

Mr. ENGEN. We can take enforcement action up to a $1,000 fine.

Mr. GLICKMAN. That would be an administrative proceeding, I assume?

Mr. ENGEN. No, that would have to go to the district court. We can fine up to $1,000 and this must be done through the district court.

Mr. GLICKMAN. Just as a practical matter, you do not have leverage over an ultralight operator as you would over a pilot. I think

that is an acknowledged fact of life because you have got a license and a certification process that you do not have with respect to ultralight operators.

Mr. ENGEN. That is correct.

Mr. GLICKMAN. In many areas, the Federal Government assures citizens that the products they buy meet a certain level of safety. I am wondering, do you think this should not be applicable to ultralights as well?

Mr. ENGEN. Would you ask that one again?

Mr. GLICKMAN. The Government assures citizens that the products they buy meet a certain level of safety. If somebody is taking off on an ultralight and flying high as 12,000 feet or so, I am wondering should that level of safety that the Government sometimes promises for certain products should apply to ultralights as well?

Mr. ENGEN. I think that is a value judgment. Part 103 I think was designed to give broad general guidelines. We found that the manufacturers have done a very good job with policing themselves. There are some standards set out—I will let Mr. Muth talk about those—for manufacturers, which are very good and if adhered to, will provide that requisite quality that you are speaking of.

Mr. GLICKMAN. OK. Well, I think we are going to have folks from the industry here. They may want to speak to that issue when they come up.

As far as you are concerned, right now the industry efforts of self-regulation are satisfactory, or is it too early to tell?

Mr. ENGEN. At this point in time we are 20 months into our 2 years. It is working. It really is working, and I would say it is satisfactory. I really want to keep my option open. As I said earlier, we promised to have a regulatory review after 2 years of trying and we are coming up on that now. To this point in time, it has been satisfactory.

Mr. GLICKMAN. Are you familiar with the reported use of ultralight aircraft for things other than pleasure, like police surveillance? If this becomes more commonplace, would you view the need for stronger regulation?

For example, I have been told that traffic control for some of the radio stations might be more suitable with an ultralight than with a Cessna 172 or whatever is used out there.

Mr. ENGEN. Our regulation, Mr. Chairman, any time an ultralight is used for anything other than sport flying, it should be registered and certificated and the pilot must have a license. In public use airplanes we have special provisions. You mentioned police or something like that, where they can fly aircraft to their own standards.

Mr. GLICKMAN. Let me read you something from "Ultralight" of September/October 1983. There is a letter to the editor by a gentleman from Florida. I will read the relevant point:

"I crashed a Rally 2 in August 1982. I broke both legs and almost died. It was my first flight in an ultralight. However, I have 2,000 hours in Navy jets with 200 aircraft carrier landings and ATP and Lear jet and flight engineering experience on 727's. My brother was an ultralight dealer. My instruction was limited. I have complained to AOPA, Air Safety Foundation, National Transportation Safety Board and Federal Aviation Administration. It takes a li-

cense to drive a car. Until the FAA wakes up ultralights will have no firm rule."

I wonder if you might respond to that letter?

Mr. ENGEN. Well, it is structure as a support, Mr. Chairman, and when FAR 103 was structured, there were a lot of different views and 2,500 people who responded had a lot of different ideas on how it should be done. FAR 103 recognizes it as a sport and puts emphasis on the individual. The prevailing comments that we have received at that time were from people who were operating ultralights either powered or not powered, and the prevailing feeling from within the entire community was that it should remain as a sport, and that is why we took the tack that we did.

Now, unfortunately, a lot of people out there who have licenses are doing the same thing that this flying aviator has done. The fact that he himself had a license and was a highly accomplished pilot I think speaks well for him, but it points out you have got to understand the machine you are flying, really.

I hesitate to say. I don't know the cause of that accident and perhaps maybe Chairman Burnett might comment on this, but it would seem to me that it is the individual's responsibility under the rule to be sure that he or she is in fact qualified to fly that particular airplane.

Mr. GLICKMAN. Do you have statistics on the number of ultralights that have been involved in accidents?

Mr. ENGEN. I think maybe Chairman Burnett will. I have some in my mind. I can give you some facts.

Over the last 18 months—because that is my only knowledge, I didn't go back before that—roughly one-third of the accidents that occurred—I think there were about 100 accidents, let's say—roughly one-third of those accidents involved stalls, spin, something as a result of pilot action or lack of action.

One-fifth of those involved hitting a tree or hitting a wire, or hitting a tower, and one-fifth of them involved structural—I don't want to use the word failure, I will use the word failure—wing collapsing, broken cables, disconnect in the control surfaces. Those are the kinds of things that are happening out there.

Mr. GLICKMAN. How many midair collisions are you aware of?

Mr. ENGEN. In the last 18 months there were two and those were between—each one was two ultralights.

Mr. GLICKMAN. What about the liability of the Government as a third party if an ultralight causes an airliner accident? I assume that if an ultralight slams into a 727—there is some. I realize the ultralight might be smashed to smithereens but I assume the 727 will also sustain damage that could be catastrophic damage. I am wondering if the Government has any liability in those cases—would have any liability in that kind of a case? Let us say that ultralight was operating outside the controlled air space or inside. I suppose you could have all sorts of scenarios develop.

Mr. ENGEN. Let me say—I will give the simple answer first. I think that we would have some third-party liability there. The reason that we have got 103 is to make sure that this doesn't happen and that the reason we structured it to fly out of controlled air space, or if it is going to be in the controlled air space, to fly with prior permission, to make sure this does not, in fact, happen.

If people act outside the law, the same thing can happen with a Cessna 150 as can happen with a ultralight.

Mr. GLICKMAN. But at least in operating a Cessna 150, you have certification and licensing requirements that the pilot is supposed to know about at the time he gets his license, whereas, with these planes you may have a situation where——

Mr. ENGEN. I hope everybody understands, Mr. Chairman, we are doing our very best—as you asked me before, I hope that we are getting through to the entire community with the proper understanding of 103.

Mr. GLICKMAN. It may be the case. I am saying there is no requirement that that information gets to pilots because that pilot isn't required to take a course or get a certification. I appreciate your testimony. I would say that, one, the concern that remains is we are spending billions of dollars modernizing the air travel system. I know you are actively involved in that. I would hate to see something as small as this issue cause an accident or render a catastrophe or otherwise damage or hamper the amazing amount of effort and money we are to come up with for this complicated system to keep airplanes from crashing into each other.

Mr. ENGEN. I join you.

Mr. GLICKMAN. I hope that you monitor this real closely. If you think that changes are needed in part 103, that you will not be afraid to move ahead with those.

Mr. ENGEN. Mr. Chairman, thank you very much. I appreciate those words and yes, I will monitor closely and I really do look forward to a regulatory review in October, and I really do look forward to hearing what else is being said here today. I think this hearing is a very supportive thing for the entire evolution of the ultralight and I think it will play a big part in how my mindset goes in conducting that regulatory review in October.

Mr. GLICKMAN. It is an interesting phenomena that we have gone from the simplest of technology to the most complicated technology, and now we are talking about the most simple of technologies, and it is hard for society to cope with, after being so complicated, to cope with something that is so simple. But as H.L. Mencken said, "For every complicated problem there is a simple and wrong solution," and we don't want to see that happen in the area of the ultralight regulation.

We appreciate your being here and appreciate your fine testimony. Thank you very much.

Mr. ENGEN. Thank you, Mr. Chairman.

[The prepared statement of Mr. Engen follows:]

STATEMENT OF THE HONORABLE DONALD D. ENGEN, FEDERAL AVIATION ADMINISTRATOR, BEFORE THE HOUSE COMMITTEE ON SCIENCE AND TECHNOLOGY, SUBCOMMITTEE ON TRANSPORTATION, AVIATION, AND MATERIALS, CONCERNING REGULATION OF ULTRALIGHT AIRCRAFT. MAY 21, 1984.

Mr. Chairman and Members of the Subcommittee:

I appreciate the opportunity to appear before you today on the subject of ultralights. Although this marks my first appearance before this Subcommittee, I am well aware of the Subcommittee's dedication to the task of promoting aviation safety, and of the fine, professional working relationship between the Subcommittee and the FAA. You may be assured that I am committed not only to continuing that cooperative working relationship but to working with you to make it even stronger and better.

I welcome the Subcommittee's interest, today, in looking at ultralights. This relatively new segment of the aviation community has presented us with the novel opportunity to try to develop a framework which applies the regulatory powers of the FAA where necessary for safety, yet provides both the opportunity and incentive for the private sector to help in promoting a safe ultralight industry. Let me take a few moments to explain.

Ultralights are a relatively new phenomenon, having been introduced in the U.S. in the mid-1970's. In a short span of

time and as people experimented, what started out as very simple hang gliders became increasingly more sophisticated powered hang gliders and ultralights, with greater capabilities and range. As more ultralights came into use, the FAA began to receive reports of sightings of these vehicles in controlled airspace, and of operations over congested areas and spectators. The potential for compromising safety was becoming increasingly apparent, and the FAA concluded that regulatory action was needed to offer greater protection to other airspace users and to persons on the ground.

Fundamental to the FAA's approach to regulating ultralights, and based on strong sentiment from the ultralight community, were two basic tenets: 1) since ultralights were primarily used for sport or recreational purposes, the thrust of FAA's regulatory efforts would be to preserve the capability of persons to enjoy this recreational activity by taking the minimum number of regulatory actions necessary for safety; and 2) the private sector would be encouraged to play an important role in "self-regulation" and policing of the industry to promote further advances in safety.

Applying these principles, the FAA proposed the institution of rules governing ultralight operations in July 1981. After analysis of about 2,500 comments from the public, the FAA promulgated final rules for ultralights, accomodating disparate

views in a new Part 103 of the Federal Aviation Regulations, effective on October 4, 1982.

Under Part 103, a powered hang glider is considered to be an "ultralight" if it weighs less than 254 pounds; is limited to carrying 5 U.S. gallons of fuel; has a maximum speed of 55 knots; and a power-off stall speed of not more than 24 knots. Further, the vehicle may not possess an airworthiness certificate, must be limited to a single occupant, and may be used for recreation or sport purposes only. Any vehicles failing to meet any of these criteria are considered "aircraft" for purposes of airworthiness certification, airman certification, and registration. Any vehicle registered as an aircraft cannot be flown interchangeably as an ultralight and vice versa.

The weight, speed, and fuel limitations are intended to minimize the potential hazards in case of an accidental impact. The low flying speeds enable ultralights to operate from surfaces other than those designed for aircraft, thus lessening the potential for interference with aircraft operations. Restricting the vehicle to a single occupant recognizes that an individual engaging in a sport activity may accept the risks of doing so for himself, but should not be able to do so for others. An individual who elects to operate an ultralight without pilot qualifications should be assumed to

do so with an awareness of the risks involved; on the other hand, a passenger from the general public may well assume that the vehicle operator holds certification as a pilot, and thus not be in a position to make an informed decision about risks involved in flying with an uncertificated individual in an ultralight.

Part 103 also prescribes a number of operational requirements for ultralight operators. For example, in the same manner that FAA rules govern aircraft operators, ultralight operators are barred from engaging in any hazardous activity which jeopardizes the safety of persons or property on the ground or in the air. Their hours of operation are limited to provide greater "see-and-avoid" capabilities for aircraft operators: in controlled airspace, ultralights may operate only during the period from sunrise to sunset; in uncontrolled airspace, they may operate during the twilight period, provided they have installed an anticollision light. Ultralight operators are required to yield the right-of-way to aircraft, and are prohibited from operating over congested areas. Ultralight operators may not operate within an airport traffic area, control zone, terminal control zone, or positive control area, unless the operator has received prior authorization from the air traffic control facility having jurisdiction over that airspace. Ultralights must also be operated by visual reference to the surface of the earth, thus assuring that an

ultralight can descend and land safely at any time without entering obscured weather conditions which can cause spatial disorientation. Flight visibility and cloud clearance requirements are the same as those imposed for Visual Flight Rules flight operations by fixed-wing aircraft.

As I mentioned earlier, Part 103 is designed to place minimum constraints on ultralight operators while increasing the safety of their operations with respect to others in the air or on the ground. The vehicular and operational limitations imposed upon ultralights are such that the sport and recreational aspects of their use are little diminished, yet added protection has been ensured for others by the regulatory framework. I also mentioned that the FAA had intended to foster self-regulation and policing within the industry to add to the safety offered by our regulations. Since industry representatives are here today, I would prefer to let them offer detailed explanation of their efforts in the area of pilot training, design, working with local communities, and marking of aircraft. As keepers of the aviation regulations, the FAA needs to continue to evaluate these efforts to see if they will meet future safety needs. We are just 20 months into use of Part 103.

As the members of the Subcommittee know, I was not Administrator of the FAA when Part 103 was conceived or promulgated. I have, however, flown an ultralight and

participated in the evolution of their use. My view of this rule is that it addresses the issues involved for the purpose of sport flying. It permits the continued enjoyment of a recreational activity without the adverse impacts of unwarranted regulatory burdens. At the same time, it does prescribe reasonable limitations on the operation of these vehicles to provide an acceptable level of safety to the operator and to others. My view of the regulation of ultralights is to continue on as specified in Part 103, working closely with the entire aviation community and urging the ultralight community to continue efforts to further improve safety. We should consider such changes in the future as may be proposed by the aviation community or indicated by operational experience.

Have we done everything we will need to do to regulate ultralights? Probably not. On the other hand, the FAA made it clear in the preamble to Part 103 that future regulatory action may be taken by the FAA as circumstances dictate. It is my view that changes for Part 103 should be based on operational experience and be proposed by the aviation community from within.

I have the same potential safety concerns that others might have, including very likely some members of this Subcommittee. For example, even though substantial strides are being made by the aviation community with our support, is there more which

should be done to assure that ultralight pilots are adequately informed of the obligations imposed upon them by our regulations and by common sense? Does what we have done go far enough to minimize incursions of ultralights into unauthorized airspace?

Because of geographical and other unique characteristics of individual airports, we have not prescribed procedures to be used by ultralights at uncontrolled airports, leaving the individual solutions over the manner in which ultralights will mix with other traffic to be worked out on a local basis between airport operators and the ultralight community. Since parachuting operations are already conducted around uncontrolled airports without significant problems, we believe ultralight operations are similarly acceptable from a safety standpoint. Further, I should add that we have been encouraging separate landing strips to be made available at these airports for ultralight use so they will be taken out of the normal stream of traffic. Moreover, we encourage the establishment of separate flight parks for ultralights. Are these actions enough? I don't know.

Therefore, I intend to watch this area closely to fully assure myself that adequate measures have been taken to reduce the possibility of incidents between ultralights and conventional aircraft, particularly if there is a continued growth in the number of ultralights. I should note that we have seen some

progress--though I'd like to see some more initiatives--on the part of states and local communities in terms of establishing flight parks for ultralights. For example, San Diego County has established a flight park for ultralights on county land which already provided recreational use for off-the-road vehicles. Texas has helped to facilitate the establishment of flight parks within the State by recognizing the recreational rather than industrial nature of ultralight flight parks. In Virginia, the aeronautics commission testified in behalf of a prospective flight park operator before a local zoning commission.

Another area of continuing interest to me is whether adequate vigilance and oversight will be exercised within the industry over the design and construction of ultralights and whether there will be adequate standardization; or whether this will be an area where the FAA will need to reconsider its approach in the future.

In short, Mr. Chairman, I am satisfied with our regulatory progress up to this time. But, I too have questions which are not yet answerable given our limited operational experience under Part 103. I intend to satisfy myself that we have done enough, but that will take more time and added operational experience. I can assure you I will monitor closely our progress under Part 103, and that the FAA will take whatever future actions may be necessary in the interest of safety. In this respect, Mr. Chairman, I would welcome any observations the Subcommittee may have concerning ultralights, and look forward to reviewing what is said before the Subcommittee.

That completes my prepared statement, Mr. Chairman. I would be pleased to respond to any questions you may have at this time.

Mr. GLICKMAN. Our next witness is the Honorable Jim Burnett, Chairman of the National Transportation Safety Board, a frequent witness before this subcommittee, and one of the most able people in Government today. We appreciate your being here and you may proceed as you wish, whether you want to read your statement or summarize it, it is up to you.

STATEMENT OF JIM BURNETT, CHAIRMAN, NATIONAL TRANSPORTATION SAFETY BOARD, ACCOMPANIED BY HERB BANKS, DIRECTOR OF THE BUREAU OF FIELD OPERATIONS, AND BERNARD LOEB, CHIEF OF SAFETY STUDIES AND ANALYSIS DIVISION, BUREAU OF SAFETY PROGRAMS

Mr. BURNETT. Thank you, Mr. Chairman. It is always a pleasure to appear before you and your distinguished subcommittee, and it is a particular pleasure to be here with Don Engen today for the first time in our new respective capacities. I assure the subcommittee chairman that we are aware of his very sincere dedication to safety.

I would like to introduce the staff I have with me. Mr. Herb Banks, who is at my right, Director of our Bureau of Field Operations. Bureau of Field Operations has responsibility for investigating the ultralight accidents and at my left is Dr. Bernard Loeb, who is Chief of our Safety Studies and Analysis Division, Bureau of Safety Programs.

I have, of course, submitted a statement to the committee for the record and I do not want to read it in full. I do want to draw some points out of it.

We investigated, as of the time we prepared this statement, 117 accidents—I think it is 122 now—61 of which were fatal, accounting for 63 deaths. The death toll, I think, is now 68. Although we are still analyzing the results of these investigations, I think it is important to understand one thing we do not have and that is trending information. We have just been in it 1 year, we do not have a feel for what trends are going to hold, which is, of course, important information to have.

We do have, I think, some helpful observations. In-flight loss of control was cited in 35 percent of the fatal accidents which we investigated, while in general aviation, in-flight loss of control accounts for only 18 percent of the fatal accidents. So there is an overrepresentation of this factor among ultralights. This reflects, I think, to some degree upon the training program that is available for ultralight pilots, although we have observed apparently about 60 percent of them, in fact, do have pilots' licenses.

Another significant factor that we have observed in ultralight accidents has been the airframe or common failure which was cited in 26 percent of the fatal accidents, although in general aviation, it is a factor in only 5 percent of the fatal accidents. This, of course, raises questions about the appropriateness of the certification program for ultralight aircraft.

We also have observed that 37 percent of the ultralight accidents we have investigated occurred on or near airports, which suggests that ultralight activity is at the present time going on in close association with traditional general aviation activities.

Thirty-two percent of all ultralight accidents in our data base occurred in three States—California, Texas, and Florida. Although to qualify that, about 26 percent of the general aviation accidents occur in those three States and they have 22 percent of the population, so the over-representation is not as much as it might sound.

In the 17 fatal injury accidents on which we have pilot experience information, we found only 7 in which the operators had flown the make and model ultralight for more than 10 hours.

I am concerned about the present level of ultralight regulation, which is very minimal. There are some regulations imposed by the FAA, but I am far from convinced that they are practical from the enforcement standpoint, as the chairman has mentioned. I think, however, that we are not ready to conclude that we need to impose upon ultralight and ultralight activity the whole ball of wax that we have traditionally imposed upon general aviation, and that either one of those policies is dangerous. But if this is going to be a growing industry, as many of us expect that it will be, it is very dangerous to have too little regulation.

I think there is also fear that because this activity may be a nuisance to traditional aviation, there may be a tendency to want to squelch it. I think beyond its value of sport entrepreneurship innovation in light engines and light aircraft frames may bear fruit for us technologically and I do not think it should be squelched. So we need to choose a level of regulation that is going to guard against the charlatans, as we have had to do with Federal medical inspections. That Federal regulation at the same time provides room for this very innovative activity to continue without being overburdened by unnecessary regulation.

I think we have to look at the regulatory strategy from two standpoints: there can be one strategy that may be necessary for the training of pilots and one for operational limitations that are placed on certification of the aircraft. I think it needs to be exclusively Federal, whatever is done, but it does not necessarily have to be done by the Federal Aviation Administration. The Consumer Product Safety Commission, which regulates other sporting equipment, might get involved in it, although I do see disadvantages in that.

We do not, I think, have to go with the full FAA regulatory procedure used for general aviation. They have more limited procedures for certifying gliders and I think that there is room for development of industry regulation. Not really the kind of self-regulation we have now, but some sort of industry code which the manufacturers might have to meet, along with industry monitoring that would be greater than the kind of regulation that we have now, but not involve necessarily the FAA describing all the standards or even diverting their resources to monitoring.

When we look at the issue of training, I think it is reasonable to think that one of the options would be to expect the ultralight pilot to be fully qualified as a pilot, which apparently most of them now are. But I think we still need to entertain the possibility that a more limited training process should be sufficient, although I am skeptical that the present level of no training requirement is going to be effective. However, that could be met by the States.

We think there is a lot of options we have to consider, and I don't think we want to foreclose any of them.

Mr. GLICKMAN. Thank you.

You mentioned gliders. I understand, talking to staff, FAA does have an air worthiness certification program for gliders right now?

Mr. BURNETT. That is right.

Dr. LOEB. That is correct, they do have a certification program that is somewhat different from the certification requirements that are put on the manufacturers under part 23 for the normal fixed wing aircraft, but they do have a program that does require certification. It is more of a self-certifying program.

Mr. GLICKMAN. But they have at least acknowledged that these particular flying vehicles are unique and, therefore, there is some reason to have some air worthiness studies, but they are different from other fixed wing aircraft and, therefore, may not need as severe a standard.

Mr. BURNETT. I think that is correct, they are probably somewhere in the middle.

Mr. GLICKMAN. Because you have indicated to me a large number of the accidents have to do with like the quality of the piece of product that you are flying is in question and, therefore, there does seem to be some need for some degree of certificate of air worthiness offered by someone in this process.

Mr. BURNETT. I want to be clear that our categorization of 26 percent of the accidents involving airframes breakup did not necessarily suggest all of these accidents involved a design deficiency. Certainly when you compare it with the general aviation—the level of experience of that same factor in general aviation—it raises some concerns.

Mr. GLICKMAN. Let me ask you this—I should have asked Don Engen—are most of these planes put together by the pilot himself, or do you buy the vehicle packaged and all the parts to be put together?

Mr. BANKS. Actually, the ultralight buyer buys what is known as an ultralight kit, which is put together with instructions inside. There are occasions where the manufacturer will actually give guidance as to how they are supposed to be assembled. But to answer your question, you are right, it is usually put together from a kit by the individual.

Mr. GLICKMAN. That leaves me out. I couldn't put together my daughter's swing set from Sears. I could never put together something like this.

Mr. BURNETT. The problem is you may attempt to put together your daughter's swing set and your daughter may not be in a great deal of danger from any defect.

Mr. GLICKMAN. I see your point. The risk involved obviously is much greater.

Mr. BURNETT. Now, in fairness, some of the manufacturers go much beyond this and they send out a technician to be sure it is put together correctly the first time and require some training for them as part of the sale package, but that certainly is not all the manufacturers and it does not take care of the problem of resale of these vehicles, and there is quite a ready market for resale of them.

So the manufacturer cannot control that and at the same time, later, if you develop information about problems with the airframe, you do not have any kind of list of people you need to communicate with to be sure that they have the information that would be put out in an AD or AC or any of the other methods that FAA has of communicating with pilots in general aviation.

Mr. GLICKMAN. In your view, what is your view of the overlapping and contradictory set of State ultralight regulations? Do they preempt FAA responsibility?

Mr. BURNETT. Of course, you know the term preemption is a legal term and I certainly would not want to discourage—in view of the limited Federal regulation we have right now—the States from having some operational oversight. I think it would certainly be bad if they got into trying to regulate the manufacturer of the aircraft. That would be interstate, and I think that we may find that it is better for the Federal Government to have a higher degree of regulation than to preclude that. With what we have right now, I would certainly not be opposed to the States interfering in——

Mr. GLICKMAN. Do you have any reports of ultralight aircraft conflicting with normal traffic? Is this a potential danger?

Mr. BURNETT. We have had reports that are rather remote that this is happening. There is nothing that we have been able to investigate. If a pilot sees one at that altitude, he may report it. There is nothing there, not enough track left for us to be able to pursue it.

Mr. GLICKMAN. I want to thank you for your testimony. I think that you have basically struck a good balance between the Federal Government trying to drive out a new industry and ensure an adequate amount of public protection. I suspect that with the costs of airplanes going up, in many cases, that this is going to become a much more attractive vehicle for people all over the country, and since there are no standards for how these things are manufactured, how they are put together—there may be in some cases but no Federal standards involved—I think the Government does have a role in protecting people.

It reminds me of the whole situation a little bit with the helmet laws that we have done in the motorcycle industry where some would argue if you want to be silly enough to drive a motorcycle without a helmet it is your own business. If I am in the other car and going to be sued for an accident for somebody who is a vegetable the rest of their life, I want that person to be protected both against himself and with respect to me as well. I think some of the same principles are applicable here.

Mr. BURNETT. Mr. Chairman, I was very proud to have led the safety board in its decision to look into ultralights so that we can test the validity of the part 103 strategy. I don't think we have our final answers yet. We do not know whether we will be able to continue doing investigations of all serious injury and fatal ultralight accidents that are reported to us, and we know by no means all of them are being reported. We are quite confident many of the serious injuries are not.

We do not know what is going to happen to ultralight activity, whether it will double or triple. We will not be able to continue the

level of consistency of investigation we now have, and it also depends upon the general aviation accidents eventually as to whether we will have our hands full handling that. But we are going to stick with it as long as we have the resources to do so and make whatever conclusions we find are justified.

Mr. GLICKMAN. So at the end Admiral Engen has testified they have 4 or 5 more months before the 2-year period is up. Will you be making additional recommendations in consultation with the FAA after they finish their 2-year review?

Mr. BURNETT. We would hope to do so. I am not sure that we are going to be ready quite within that time, because I think it is very important for us to get some trending information and that really we won't have for another year. I think, however, we can predict it fairly well at the close of this season—it is a seasonal activity—so we are very hopeful that we will be able to come forward with some conclusions that will be helpful to the FAA and to the Congress and the American people in deciding what to do with this activity. But we are not quite ready to do so yet. When we find individual problems with aircraft, we are pointing that out to the manufacturers and we have had a lot of cooperation in attempting to correct that.

Mr. GLICKMAN. Thank you very much.

[The prepared statement of Mr. Burnett follows:]

National Transportation Safety Board
Washington, D.C. 20594

Safety Information

TESTIMONY OF

HONORABLE JIM BURNETT

CHAIRMAN

NATIONAL TRANSPORTATION SAFETY BOARD

BEFORE THE

TRANSPORTATION, AVIATION AND MATERIALS SUBCOMMITTEE

COMMITTEE ON SCIENCE AND TECHNOLOGY

HOUSE OF REPRESENTATIVES

REGARDING

ULTRALIGHT AIRCRAFT TECHNOLOGY AND PUBLIC SAFETY

MAY 21, 1984

Mr. Chairman, it is always a pleasure to appear before your distinguished Subcommittee, and I particularly welcome the opportunity to discuss one of the fastest growing phenomena in the aviation industry -- ultralights. Within the past five years, a period during which the commercial and general aviation industries have cautiously picked their way through an onslaught of new entrants, fare wars and lost sales, ultralights have enjoyed thriving growth.

Depending upon the source of information, estimates of the current ultralight population range from 15,000 to 40,000 vehicles. The number of ultralight operators has been estimated to be about 28,000, with roughly sixty percent thought to have pilot certificates. Although considered a sport for recreational purposes only, ultralight use has expanded as significantly as its numbers, raising questions about the purpose and safety of its operations. Reports of ultralight use for purposes other than recreation include:

-- Crop spraying

-- Commuting

-- Shopping

-- Checking trap lines

-- Rides for profit

-- Police surveillance

In addition, there have been numerous reports of ultralight vehicles being operated at altitudes exceeding 10,000 feet, in regulated airspace and over congested areas. This has raised concerns about the impact of ultralights on safety in the National Airspace System.

To protect other airspace users and persons on the ground, operating rules and air space restrictions for ultralight vehicles were established by the Federal Aviation Administration in October 1982 when it issued Part 103 of the Federal Aviation Regulations. This regulation defined an ultralight vehicle on the basis of weight, power-off stall speed, number of occupants, maximum speed and fuel capacity. The regulations do not require registration of ultralights or certification of vehicles or operators because the FAA defined ultralight operation as a sport. The FAA deferred to the industry the responsibility for safety programs.

In view of continued reports of non-recreational use of ultralight vehicles and the lack of federal oversight of these activities, the Safety Board in March 1983 made a decision to investigate all powered ultralight vehicle accidents which involved fatalities, serious injuries or obvious safety issues to determine the effectiveness of 14 CFR Part 103.

One year after initiating the investigation of ultralight accidents, the Board's data base contains preliminary information on 117 accidents, 61 of which were fatal, accounting for 63 deaths.

Although we are still analyzing the results of these investigations, some general conclusions can be drawn regarding ultralight activities. For instance, inflight loss of control was cited in 35 percent of the fatal accidents, while the same cause accounts for only 18 percent of general aviation fatal airplane accidents involving personal flying.

An example close to home of inflight loss of control can be found in the Board's first ultralight accident investigation which occurred in Largo, Maryland in June 1982. A local newsman, in an attempt to get a first-hand story on the ultralight rage, took a solo trip after receiving limited instruction on the vehicle's operation. He took off without his seat belt fastened, and when the weight of his unrestrained body shifted, he lost control of the vehicle. Inflight breakup ensued and he fell to his death.

Another significant factor in ultralight accidents has been airframe or component failure which was cited in 26 percent of the fatal accidents, although it is a factor in only five percent of general aviation fatal accidents involving personal flying.

An example of structural failure occurred last July when an operator flying an Airmass Sunburst Model B untralight landed in a field to refuel on his way home. Witnesses reported that after the operator took off he climbed to 700 feet and circled the field. He reduced power, lowered the nose slightly to wave to friends then added power and started to climb.

At this point the wing folded up near the root and the ultralight plummeted to the ground in a steep nose down attitude, killing the operator. Examination of the wreckage revealed that both of the left wing load carrying cables had failed at the point of attachment to the hang cage, where the operator sits, due to uneven load distribution. The investigator notified the dealer of the findings, and the dealer in turn notified 17 purchasers of the ultralight kit of the potentially dangerous situation. Four of the kit owners reported finding evidence of wear in the wing wire attachments similar to that observed on the crashed vehicle.

These two categories of accidents -- inflight loss of control and airframe or component failure -- account for more than one-half of all fatal ultralight accidents, compared to less than one-fourth of the fatal general aviation accidents involving personal flying. Why the disparity? I think it points to the need for improved ultralight operator training and vehicle certification.

First, let's take a look at operator training. Some programs do exist, but participation is optional. These activities vary, with some ultralight manufacturers providing individual instruction at the time of purchase while others rely upon programs designed in cooperation with industry associations for use by their memberships.

At the present time, the FAA relies on these manufacturer and association programs to satisfy training needs for the industry; however, there are some

glaring weaknesses in this approach. The most significant is that these programs reach a very small portion of the users. There are, at latest count, some 130 ultralight manufacturers, only seven of which belong to the Powered Ultralight Manufacturers Association (PUMA). Even taking into account the training programs offered by some individual manufacturers, it is evident that a large majority of users receive little or no training.

And what about ultralight vehicle certification? The only existing standard is contained in a PUMA-sponsored certification program wherein a binding agreement exists between PUMA and the participating manufacturer. Under this agreement, the manufacturer is required to demonstrate that its product complies with the specifications of CFR 103.1 and to verify that the sale model meets the requirements set forth in the "Airworthiness Standards for Powered Ultralight Vehicles" published by PUMA. PUMA administers the certification program and publicizes, on a monthly basis, a listing of all models of ultralights which are certified by PUMA as complying with the requirements of its certification program.

The Safety Board applauds this and other efforts at self-regulation, but again, PUMA represents a very small portion of all ultralight vehicle manufacturers.

Additional statistics gleaned from our preliminary accident data base include the following:

-- 37 percent of the ultralight accidents we investigated occurred on or near airports.

Although many airports have designated separate areas for ultralight operations, the lack of communications equipment on most ultralights could enhance the potential for conflicts with other airborne air traffic in the vicinity of an airport. The FAA has required ultralight operators to obtain permission before operating at a controlled airport and some states have placed restrictions on ultralight landing sites.

For example, in Virginia an ultralight landing site must be registered and licensed; in Georgia and Hawaii landing sites for ultralights must meet state minimum airport standards; and in New Hampshire unregistered ultralight operations are prohibited at state owned airports. The fact remains, however, that most states have no restrictions on ultralight operating areas.

-- 32 percent of all ultralight accidents in our data base occurred in three states.

These states -- California, Texas and Florida, which account for almost 22 percent of the U.S. population -- had the largest portion of general aviation accidents as well at 26 percent.

-- In a sample of 17 fatal injury accidents where pilot experience was reported, only seven operators had flown the accident make and model ultralight for more than ten hours.

Not significant but of possible interest is the fact that only two midair collisions occurred among the ultralight accidents investigated. Both collisions involved ultralight vehicles in maneuvering flight. One collision occurred near an airport; a total of one fatality and two serious injuries resulted from these midairs.

Since issuing its Part 103 regulations, the FAA has amplified its ultralight operating rules with Advisory Circulars 103-6 issued in June 1983 and 103-7 issued last January. AC 103-6 provides specific information to ultralight operators regarding airport and flightpark operations, working with air traffic control, availability of weather services and accident reporting guidelines. AC 103-7 sets out methods which may be used in determining if a particular vehicle can operate as an ultralight or must be treated as a certificated aircraft. However, clearly the operator is held responsible by the FAA for assuring his or her vehicle complies with Part 103 and is subject to a civil penalty if the ultralight fails to meet the criteria.

Despite progress in clearer guidance from the FAA and voluntary implementation of safety programs on the part of the industry, the Safety Board remains concerned about the effectiveness of these activities in the face of a growing number of non-recreational ultralight uses and unauthorized infringement upon the National Airspace System. Thus we intend, to the extent our limited resources will allow, to continue to investigate fatal and other significant ultralight accidents and make recommendations as appropriate. We will study the data gathered from our accident investigations, continue to work with the industry in promoting additional safety programs and continue to encourage the FAA to review its involvement in activity which appears to have potential for an impact on aviation safety.

As far as the FAA is concerned, ultralights are not airplanes. But from a real-world point of view, the Safety Board can only conclude that if it looks like an airplane; if it flies like an airplane; if it crashes like an airplane; then it must be an airplane.

I want to make it clear that I am not at this time calling for imposition of full airworthiness certification of ultralight vehicles and operators, but I do think there is enough evidence to indicate a need for higher standards and better oversight.

That completes my prepared statement, Mr. Chairman. I am prepared to answer any questions you and the other Members of the Subcommittee may have.

Mr. GLICKMAN. We have a panel of aircraft people. I would like all the panel members, if possible, to come up here. John Baker, president of Aircraft Owners and Pilots Association; Paul Poberezny, president, Experimental Aircraft Association; Roy W. Muth, president of Powered Ultralight Manufacturers Association; and Charles Barclay, executive vice president, American Association of Airport Executives.

I think we will just go ahead in the order that you are listed on the schedule today, and Mr. Baker, it is a pleasure to have you here and all of you may either summarize or read your statements. We ask to the extent feasible, to try to complete your statement in 10 minutes if you can.

Why don't you go ahead?

STATEMENTS OF JOHN L. BAKER, PRESIDENT, AIRCRAFT OWNERS AND PILOTS ASSOCIATION; PAUL H. POBEREZNY, PRESIDENT, EXPERIMENTAL AIRCRAFT ASSOCIATION; ROY W. MUTH, PRESIDENT AND CHIEF EXECUTIVE OFFICER, POWERED ULTRALIGHT MANUFACTURERS ASSOCIATION; AND CHARLES M. BARCLAY, EXECUTIVE VICE PRESIDENT, AMERICAN ASSOCIATION OF AIRPORT EXECUTIVES

Mr. BAKER. Mr. Chairman, we appreciate the opportunity. We, too, subscribe to the appropriateness of the hearings, because there is much misinformation being bandied about in this whole area.

We would like to submit our statement for the record.

We are a pilot organization currently representing 272,000 pilots, of whom 8,500 are ultralight pilots. We got involved in the ultralight activity almost by indirection from two quarters.

One, we were having complaints from a significant number of our pilot members. For instance, we have approximately 45,000 members in California, an area of heavy ultralight activity. We also were approached by the U.S. Hang Gliding Association, which has had a very successful record in self-regulation.

They were starting to get a significant number of ultralight members and felt that was not the right home for them.

Administrator Helms also asked us to get involved. After a series of meetings with the Administrator, after he made the judgment FAA was not going to regulate, we felt it was appropriate we get involved.

So we did get into the activity. The Administrator at the time we got involved spelled out the FAA plan. It was conceptually a three-legged stool—airmen registration, aircraft registration, and aircraft standards or certification standards.

We felt it was inappropriate for us to take on the third or airframe standards. That is not our line of work. So we worked with the Powered Ultralight Manufacturers Association, who are here with us, to develop the third leg of the stool, the airframe standards.

But the first two, aircraft registration and airmen registration, we did undertake. We had approval by the FAA that the program met the intent of part 103.

And since last July we have been running this program. The program really consists of training experts, those people who would

observe pilots flying the ultralights, registering the pilot who qualifies under the criteria established by the expert, and then registering the machine and assigning a number to it so it would have a registration number and is identifiable.

That gives us the advantage of being able to address exactly the problem that the chairman addressed, and that is locating machines by types, so if there is a chronic problem or an epidemic, the owners of those machines can be reached quickly and advised of problems.

And, indeed, it has worked in that fashion. The program has been in place now about 18 months. And I think it is an appropriate time to take a look at it.

One, the Federal Air Regulations do apply, as the Administrator indicated. There have been 160 violations or enforcement actions undertaken. His number of 40 were successsful prosecutions thereof.

The air space rules essentially all apply. And, indeed, it has not been a problem. There have been some organizations who took a flyer, if you will, at this question, and when they dug into the NASA statistics and the FAA statistics, we have not had any significant number of incursions by ultralight in the controlled air space, probably statistically no greater than you have incursions by general aviation in the controlled air space without a clearance.

So I don't think we are seeing any significant or wholesale problem there.

Other misinformation that seems to be abroad is that there is a big problem with the States. I think the National Association of State Aviation Officials will testify on the basis of a survey of their members, a significant percentage essentially accept FAA approved program as being adequate to meet the State's needs.

There are some random regulatory efforts by States, but that is not again unique. Minnesota, for instance, has very strong pilot regulations which are supportive of and duplicative in many instances of the Federal air regulations.

Obviously the Federal Government can preempt them if they do not comply. We have no problem as long as the requirements are not onerous or ridiculous. Occasionally one has popped up that was somewhat ridiculous.

We think that the program set up through the AOPA Air Safety Foundation has finally gotten off the ground and is starting to move quite effectively. We have forwarded to the committee a graphing of that from last July.

It has gone from essentially nothing to 2,500 pilot participants. We have trained 1,221 examiners with a road show program which is traveling the country. And we currently have 912 machines registered and that number has come up from 52 in July.

So we believe the program is building and the trend is up in that regard.

We also finally for the first time are getting significant industry support. There has been a major dialog going on in the ultralight community saying, "Why do we need any regulation, we were unregulated and so forth."

I think the "20/20" show, which was a terribly biased and unfortunate TV representation of the ultralight activity, stimulated people

to recognize they better start pulling on the OARS in the same direction or the program will go down the drain based on public perception and misinformation, not information.

So the program is taking off, and it is generating some interesting statistics.

Forty-six percent of the ultralights in the country currently are flying from airports, contrary to what people say. As the chairman of the NTSB indicated, all the studies have indicated approximately 60 percent of the people flying ultralights are licensed pilots, another interesting statistic.

To date, there has been no recorded personal injury or property, significant property damage to a third party since the inception of the ultralight activity.

So, we are not going around falling on people or property either, as far as that goes. And it has not become a major problem.

Indeed, of the 1.2 million operations that were estimated to have taken place by the ultralights—and we feel that is a very conservative number—last year there were fewer than 10 violations a month levied against the ultralight community—10 violations of the Federal air regulations, if you will.

There is, I think, every evidence that the industry is finally starting to mature.

Regarding training and quality control, it is a fledgling industry and it has taken some time to get organized. But if we hark back to the history of parachuting, of the hang gliding movement which has an exemplary record, of the road vehicles, snow mobiles and so forth, there is no reason why this industry cannot or this activity, and it is a recreational activity. And we are committed to the proposition it stays that way, it can self-regulate and do it effectively.

It is just a question of time, we believe. We have had some other very positive items. The Experimental Aircraft Association Board in February endorsed and supported the Air Safety Foundation program which will give it additional credibility in the market place.

We now have the two place trainer in place, and we do know from the studies that we have run and which are appended to our text that a high percentage of the accidents are training accidents.

We also know that the two places is a solution to many of these problems. An interesting circumstance in relation to those 300 and some accidents which are recounted in our study, fewer than 4 percent of the accidents recorded were participants in the Air Safety Foundation program.

So we believe the program does do what is necessary and in a very short period of time will, indeed, fill in the gaps and enhance the safety and allow this to continue to be a minimally regulated sport.

One of the myths that is abroad in the land is that there is no insurance available. There is now insurance available, both in terms of liability insurance and property damage.

Another myth is that AOPA got involved in this to make money. There is no way in god's name that we will ever make any money on it nor was it our intention when we started out.

We got involved in it because we are in the general aviation business and we saw general aviation atrophying and dying. The statistics are startling.

We stayed around 800,000 pilots on the active roles from 1947 until 3 years ago. Two years ago it dropped to around 760,000, and then down to 730,000, and the current guess is it is going to be 710,000 this year, which means that we are seeing this industry age and essentially become like the prehensile tail.

Mr. GLICKMAN. You think there is a natural evolution to the problems the general aviation industry is facing?

Mr. BAKER. I think there is no question. I think you can see it replicate history as in the airline business. We went through the period where eveybody was buying surplus DC-38's and starting airlines. Those become the midcontinents, which become the Ozarks, the Braniffs and so forth.

We are seeing the same thing happen in the airline industry with the commuters now becoming locals and regionals. And the same thing is happening in general aviation.

It is clear people want to fly. The question is, Can they afford to fly? We have the ultimate healthy circumstance, and we were very slow in picking it up. Three to four years ago traditionally, the new students start was someone in the 23- to 25-year-old range.

Three years ago, almost overnight, it changed 39 to 42 years old. And I think the message there was pretty clear. Unless you have disposable income or a business write-off, you cannot afford to learn to fly or stay active. The fact that 60 percent of the people flying ultralights are pilots, I think is a pretty good indicator we have made general aviation too costly for the average man.

The urge to fly is still there, and the ultralight is the vehicle that they are currently seizing on. There is another evolutionary step coming along which I think will fill in that void, and that is the basic aircraft now before the FAA which was proposed by ADPA.

It is a machine that will be certificated, which will have some utility, keeping the ultralight as a sport aircraft. I think a lot of people get tired of being hit in the face with bugs and not being able to go anywhere. So moving inside and out of the rain will be an attractive alternative. And indeed those FBO's who have been aggressive and good marketers have had a high success in moving the people from the ultralight into the standard aircraft.

I read recently, in fact, Friday, a very interesting statistic. In the last 10 years we have issued 1.2 million student pilot certificates, and of that 1.2 million student pilot certificates over the last 10 years we have an increase of pilots, licensed pilots, with private or higher, of only 15,000.

And I am sure if you look at the last 3 years the curve has gone the other direction and we have suffered a net loss that is dramatic. And there has to be a message there.

The other points I guess are pretty perfunctory. I am comfortable some will come up during the course of questions. I have three recommendations.

One is that we need stronger support from the rest of the industry. We are finally starting to see some of that. The option is no longer should there be self-regulation or no regulation. The option

is should we have self-regulation or full-blown Federal regulation. You have to opt one way or the other.

The second is we need stronger FAA enforcement and we need it not only in terms of going after the people violating the regs, but publicize it so the word gets about and fines get about very quickly, I can assure you.

We need the enforcement also on the illegal machines that are flying. Indeed, that indictment goes across a large segment of the community. Those people that sponsor fly-ins and air shows are some of the worst offenders.

They allow nonultralight aircraft to fly as ultralights. We have to stop that. What it is doing is putting attractive machines in there that are not legal ultralights, that do have performance parameters outside the legal limits of the ultralight, but put the legitimate ultralight manufacturer in a position where he cannot compete, because he doesn't have a sexy looking, jazzy piece of machinery to sell.

We need enforcement in that arena and need it desperately.

The last piece, I think, would be additional time. I think we finally have gotten our parts together on this thing, it is starting to move forward. As the FAA has indicated, they are going to look to air space review in October.

I would urge the NTSB also try to channel their efforts in that direction. We have already made the commitment both to the FAA and to my board that we will be back to them in October with a level of effort that we believe is sustainable or a recommendation that the Federal Government take the program over, because we cannot and will not continue to participate if we don't get industry support.

[The prepared statement of Mr. Baker follows:]

AIRCRAFT OWNERS AND PILOTS ASSOCIATION
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STATEMENT OF JOHN L. BAKER, PRESIDENT

AIRCRAFT OWNERS AND PILOTS ASSOCIATION

Regarding Emerging Ultralight Aircraft Technology and Public Safety

COMMITTEE ON SCIENCE AND TECHNOLOGY

SUBCOMMITTEE ON TRANSPORTATION, AVIATION AND MATERIALS

HONORABLE DAN GLICKMAN, CHAIRMAN

UNITED STATES HOUSE OF REPRESENTATIVES

MONDAY, MAY 21, 1984

The Aircraft Owners and Pilots Association represents the aviation interests of more than 265,000 individuals who own and fly general aviation aircraft both for business and personal transportation. In addition to this number we also represent 8400 individuals who have specifically indicated that they are interested in flying and owning ultralight vehicles.

The membership service activities of AOPA are complemented by a separate but closely related organization--the AOPA Air Safety Foundation (ASF). This is registered as a nonprofit tax-exempt corporation chartered to promote general aviation safety through research and pilot education. The importance of the distinction between these two organizations will become apparent as we discuss the subject under consideration here today.

General

AOPA feels strongly that the federal regulation and guidance materials governing ultralights are adequate to ensure the public safety and the self-regulatory programs are adequate to protect individual participants in the sport.

AOPA and the Air Safety Foundation have been intimately involved in the ultralight movement for more than three years. Early in this period we saw the promise of ultralights as being a way for an even greater number of people to enter general aviation and enjoy its recreational aspects. Ultralights are an extension of the general aviation spectrum; it forms a new entry level into recreational flying.

This is important because of the recent decline at the lower end of general aviation activity. High training and aircraft costs combined with the proliferation of federal regulations have severely curtailed participation in sport and recreational flying. On the surface this may not be seen as a critical item, but it should be realized that traditionally this type of pilot has provided the manpower and vision to create the strong air transportation system that America enjoys today. Without the entry level enthusiast, the upper end of the aviation spectrum will soon suffer.

AOPA worked closely with the FAA in the formulation of the basic rules for ultralight flying, Federal Aviation Regulation Part 103. This included an endorsement of the concept of minimum regulation with the provision that the community itself would provide additional guidance for itself through self-regulatory programs. In order for ultralights to remain an attractive alternative to the heavily regulated and expensive recreational general aviation pursuits, this philosophy of minimum regulation had to be given a chance to prove itself.

The AOPA Air Safety Foundation embarked upon a program of voluntary pilot competency and vehicle registration for ultralights fifteen months ago. These programs were designed to complement the federal regulations concerning ultralights and provide guidance for enthusiasts to demonstrate that they were safe and responsible individuals. The AOPA Air Safety Foundation is thus far the only such organization to design and implement such programs and to receive FAA recognition for efforts in these fields. Along with the Powered Ultralight Manufacturers Association, programs encompassing pilot competency, vehicle registration and vehicle airworthiness were submitted to the FAA for recognition. The FAA recently recognized our efforts as being the type they had envisioned when Part 103 was drafted.

In general, Part 103 and self-regulation are working to the best interest of the general public and to the ultralight community. The safety of the general public has been protected and maintained while at the same time the relative freedoms allowed to the ultralight community have allowed the sport to flourish.

AOPA Air Safety Foundation Ultralight Programs

ASF programs cover ultralight pilot competency, ultralight vehicle registration, accident reporting, and safety information dissemination to the community.

Pilot competency is determined through a network of trained examiners who determine an applicant's abilities with regard to ultralight knowledge, flying skill and experience. Knowledge factors required are heavily oriented towards regulations, airspace, air traffic rules and conventional aircraft operations.

Vehicle registration provides a means by which an aircraft can be visually identified through markings on the wings. The marking system devised by the Air Safety Foundation has received FAA recognition. The FAA, state and local governments all have access to our registration files on an as-needed basis.

Finally, for two years the Air Safety Foundation has sponsored a program of voluntary accident reporting for the ultralight community. The Foundation distributes easy-to-use accident reporting forms through its examiner network and encourages all persons involved in the sport to report all accidents for the sake of safety and pilot education.

These programs have intrinsic benefits for participants but also show that they are responsible individuals, interested in the public well-being and in safely integrating into the normal flow of aviation traffic. Participants in these programs receive on a periodic basis an analysis of safety data and information concerning airworthiness features of their vehicles. A copy of the safety bulletin is attached. Additionally, the Foundation regularly sponsors and participates in a variety of safety seminar and pilot education activities for the ultralight community. To this end, they have published a number of brochures and pamphlets concerning ultralight safety and perhaps, most notable, the only document which presents guidelines for the design and construction of ultralight flightparks.

Finally, the Air Safety Foundation was instrumental in obtaining an exemption to the provisions of Part 103 that allows flight instruction to be given in a two-place ultralight-type vehicle under the provisions of Part 103. (Under normal circumstances only single place vehicles are authorized under Part 103.) This exemption is a very positive step towards increasing ultralight safety through providing improved flight training methods to the community.

All of these efforts by the AOPA Air Safety Foundation have provided a rallying point for the ultralight community to show that they are worthy of minimum regulation by the federal government because of the self-regulatory measures in which they have become involved.

Safety

Ultralights as we know them today have been around since 1977, and in significant numbers since 1980. During this period, there has never been a serious or fatal injury to a non-participant or third party as a result of an ultralight accident. This is a significant statistic. Ultralights have only been truly regulated for 20 months, but even before that, the safety of the public was not endangered.

This is not unusual when you consider the nature of the sport. Ultralight pilots generally want to remain away from populated areas and centers of conventional aviation activity. One of the greatest enjoyments and benefits of the sport is the ability to get away from civilization, not to stay around it.

The record for individual participants in ultralights shows a trend toward improvement. The ultralight industry in the past few years has been rapidly maturing. Manufacturers and dealers in increasing numbers are now insisting on certain safety regulations and mandatory training for purchasers of their products. This trend has come out of economic necessity as much as altruism, but the effect remains the same; the individual participant is receiving greater protection from injury while participating in the sport.

The FAA has conducted informal surveys of air traffic control facilities in its regions over the past two years to determine the level of unauthorized airspace incursions and near mid-air collision involvement regarding ultralights. These surveys have shown that airspace violations and other interference with conventional aviation traffic are minimal. In support of this, there have been less than two hundred violations filed against ultralights in the twenty months that FAR Part 103 has been in effect. This information further supports the fact that Part 103 is adequate and that the public safety is being maintained.

Design and Construction of Ultralight Vehicles

Accident statistics indicate that the majority of ultralight vehicles being manufactured today are adequately designed and built. The problem is that this fact has never been verified by any comprehensive program designed to investigate design and manufacturing adequacy. Part of the FAA's mandate under Part 103 was that industry would develop voluntary airworthiness standards for the ultralight vehicle. Without these standards consumers are essentially "shooting in the dark" when they purchase an ultralight vehicle.

The Powered Ultralight Manufacturers Association (PUMA) has recently received recognition from the FAA for its efforts in devising standards for ultralights and a method by which compliance with these standards can be determined. We applaud these efforts and encourage all manufacturers to voluntarily submit their vehicles for verification under this program. Only by this method can the consumer be assured that he is receiving a safe and adequately designed product.

Airport Access

In some instances, ultralights have not been well received at existing airports. In most cases, this is because the aviation public does not fully understand the rules that govern ultralights or are not aware of the level of knowledge and skill possessed by the ultralight pilot. This is understandable from a standpoint that ultralight pilots are "the new kid on the block" and must prove themselves to the aviation community.

Over two hundred airports in the United States have successfully integrated ultralights with conventional aviation traffic. Much of this acceptance is due in large part to the efforts of AOPA in devising and publishing guidelines and suggested regulations for the integration of ultralights at existing airports. All segments of

the general aviation world were consulted in devising these guidelines and standards. There are at least ten airports, of which we are aware, where ultralights would not have been allowed access without the guidelines and standards developed by us.

The central issue of ultralight operations into existing airports is one of shared knowledge for both the ultralight and the conventional aviation forces. We find that if there is a clear understanding between the parties concerning the operating parameters and flight patterns for both, there is little conflict. These access programs are strengthened by pilot participation in the Air Safety Foundation pilot and vehicle registration programs. This is because they assure the conventional aviation forces that participating ultralight pilots are knowledgeable and desire to do what is best for all concerned.

The FAA has backed ultralight participation at existing airports quite well. Several court cases have forced the issue of equal access to public use facilities and allowed ultralight interest to override local parochial interests. Discrimination against ultralights for airport and flightpark access can be overridden through the personal efforts of those desiring the access.

Future

Ultralights have fulfilled the promise of making flying available to the common man. This has been made possible largely through the minimum amount of regulations promulgated by the federal government and through the responsible self-regulatory efforts of the participants.

It is encouraging to note that ultralight flying has increased the level of interest in all general aviation. While there are few statistics, ultralight pilots are upgrading to conventional aircraft. This is where the long-range promise of this sport truly lies.

There is currently a trend to expand the operating envelope of the ultralight. This is in large measure an answer to man's demand for "higher, faster, farther" in everything he does, in addition to marketing one-upmanship by the manufacturer. We see this as a healthy trend in that the technology and techniques evolved to improve the ultralight will become available for use by the next level of sport aircraft. AOPA and the Experimental Aircraft Association are currently working with the industry and the FAA to come up with simplified certification standards and procedures for a light recreational aircraft that will hold a standard airworthiness certificate and will require a pilot with an FAA certificate. We feel that this is the proper place for this improved technology and the desire for more utility in light aircraft.

This effort should be "exported" to the higher level and not integrated with ultralights. It will be difficult to justify reduced regulation for ultralights if the operating envelope is expanded appreciably. If the desire for the expanded envelope becomes overwhelming and ultralights had additional regulations laid

upon them as a result, the true advantage of ultralights may be destroyed because of economic reasons and bureaucratic hassle.

Ultralight aviation has a bright future. This future will only be realized if all participants, pilots, owners, manufacturers and participating organizations all work toward one goal--that the sport be conducted in a mature, responsible, and safe fashion. This can only be done by the sincere efforts of all involved by participating in programs designed to that end.

Summary

Ultralight aviation is well-served by Federal Aviation Regulation Part 103. It has proved itself to be wholly adequate in its primary goal of protection of the public. It has also served as a benchmark to define the ultralight and delineate it from other complex and utilitarian types of vehicles.

The self-regulatory programs mandated by the FAA have been working adequately in all areas. We do reserve the right to say that something in addition to voluntary programs may be needed if substantially greater numbers of people do not participate in these programs. We plan to make this assessment in October of this year, the second anniversary of Federal Aviation Administration's Regulation Part 103. However, for the immediate future, we simply urge all forces to strongly encourage voluntary participation in safety programs already in place.

ULTRALIGHT SAFETY REPORT

AOPA / ASF 421 Aviation Way Frederick, MD 21701 compiled by Jim Barrett, Ass't Dir., Ultralight Programs

"The Ultralight Community should develop a method of gathering and sharing accident, incident and maintenance problems with respect to their vehicles."

-FAA Draft Advisory Circular 103-1 (ASF Ultralight Information Manual, Page 28, Paragraph 52)

The framework of self-regulation is now complete. Publication of this initial Ultralight Safety Report fulfills the final element of the FAA's admonition to the ultralight community to develop its own safety programs. In response to this admonition, the AOPA Air Safety Foundation (ASF) developed ultralight airman and vehicle registration programs which have received FAA approval. Also, ASF has been actively soliciting ultralight accident/incident reports. This Ultralight Safety Report is an analysis of all ASF data received before January 1, 1984.

The source of information regarding many aspects of the applicant's ultralight flying experience is the ASF registration form for pilots and vehicles. The source of accident/incident information is through accident/incident reporting forms sent voluntarily to ASF. Resulting airman and vehicle data files may be compared with the accident/incident file to uncover factors relating to ultralight safety. The data are contained in three files:

1. The Ultralight Airman Registration File - This file contains identification and exposure information on 1857 Examiners and pilots registered with ASF.

2. The Ultralight Vehicle Registration File - This file contains identification and exposure data on 547 ASF registered vehicles and their owners.

3. The Ultralight Accident/Incident Report File - This file contains 357 reports submitted to ASF regarding 326 ultralight accidents (there were 31 duplicate reports).

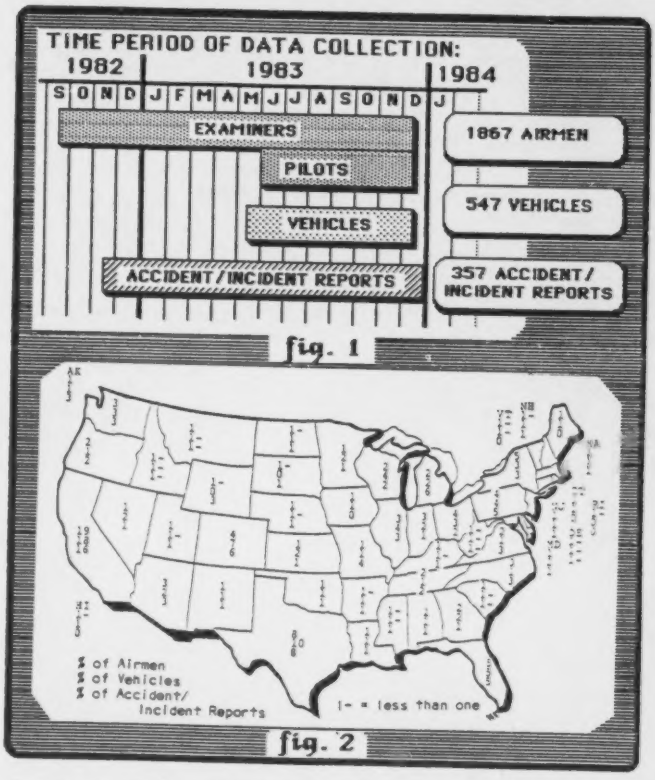

fig. 1

fig. 2

Because the reports are submitted voluntarily to ASF by people who may have no expertise in accident investigation, ASF cannot say 'This is what happened.' However, it is accurate to say 'This is what was REPORTED to have happened.'

Figure 1 shows the time period of data collection and total number of records in each file. Data collection for the three files was initiated at different dates depending on the start-up time of each program.

Figure 2 displays three numbers in each state which correspond to the three files in the ASF data base. The top number in each state is the percent of registered airmen in the airman file who reside in that state. The middle number is the percent of vehicles registered to owners who reside in that state. The bottom number is the percent of accident/incident reports received by ASF which refer to an accident or incident reported to have happened in that state.

Keep in mind that the bottom figure is the accident/incident REPORTING rate for a particular state, which may be different from the actual accident/incident rate. A reporting rate which is higher than the state's percent of airmen or vehicles may be the result of more conscientious reporters.

Figure 3 plots the percentage of pilots from various age groups in both the Airmen file and the Accident/Incident Reporting file. By cross-referencing the two files, conclusions can be made about the relationship of pilot age versus reported occurrences of accidents/ incidents.

Figure 4 shows that ultralight pilots with no FAA pilot rating are reported to be involved in significantly more accidents and incidents than certificated airmen. Ultralight pilots with some form of FAA certification constitute 58 percent of the ASF Airman File, but are reported to have been involved in only 46 percent of the accident/incident reports.

"ONE OUT OF FOUR ACCIDENT/ INCIDENT PILOTS HAD ONE HOUR OR LESS OF TOTAL ULTRALIGHT EXPERIENCE."

Figure 5 reveals that according to the reports, pilots who have been involved in accidents and incidents have approximately one-third the flying experience of pilots in the airman file. The accident/incident reports indicate a median total pilot time of 10.33 hours, meaning that 50 percent of the pilots in the accident/ incident file are reported to have fewer than 10.33 hours. One out of four accident/incident pilots were reported to have one hour or less of total ultralight experience. For clarification, "accident" means an occurrence associated with the flight operation of an ultralight vehicle in which any person suffers death or injury or the ultralight vehicle is substantially damaged. "Incident" means an occurrence, other than an accident, associated with the operation of an ultralight vehicle, which affects or could affect the safety of operations.

Figure 6 charts the type of accidents and incidents reported to ASF. These percentages may be affected by the tendency to report more serious accidents or incidents and ignore events which result in no damage or injury. Through comparisons with the National Transportation Safety Board's ultralight statistics, ASF is reasonably certain that the data base contains data on all

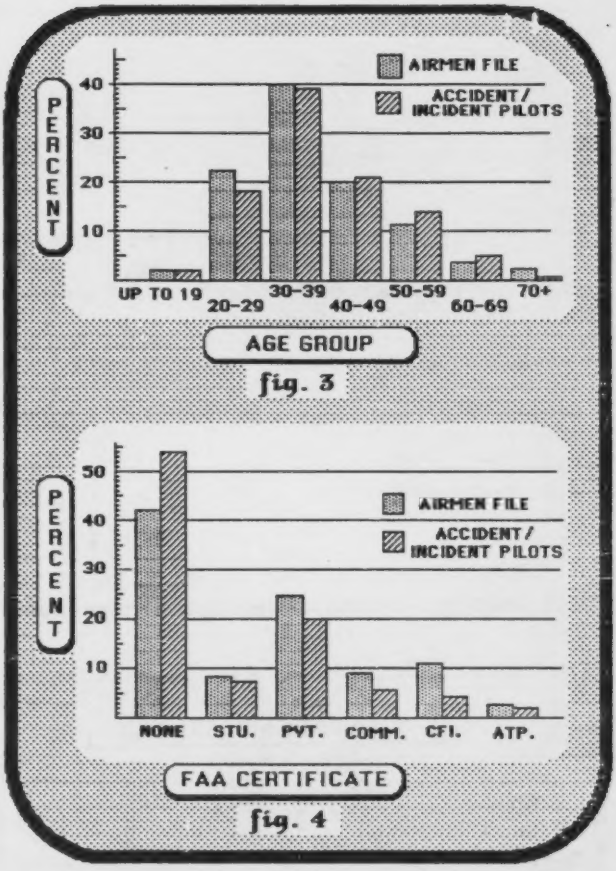

fig. 3

fig. 4

HOURS OF ULTRALIGHT EXPERIENCE		
	AIRMEN FILE (LAST 2 YEARS)	ACCIDENT/ INCIDENT PILOTS (TOTAL TIME)
AVERAGE	155.89	54.89
MEDIAN	39.97	10.33

fig. 5

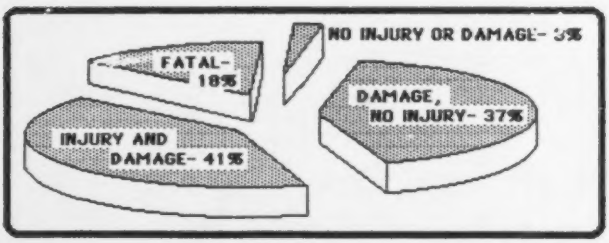

fig. 6

fatal accidents which occurred during the reporting period. During the thirteen and one-half months of collecting accident/incident reports, the ASF received reports of 60 fatal accidents which produced 63 fatalities (there were three reports of two-place ultralight dual-fatalities).

Figure 7 isolates some factors which are reported to contribute to ultralight accidents. It shows that nearly half (43.6 percent) of the reported accidents and incidents listed training as the "Purpose of Flight." This is consistent with the numbers from figure 5 which show half of the accident/ incident reports involved pilots who were reported to have 10.33 or less hours of ultralight experience.

Figure 8 indicates takeoffs and landings are involved in the majority of reported accidents and incidents (as with most other branches of aviation). By combining the factors in Figure 8, which are reported to occur in the traffic pattern and on the ground, we can account for almost 60 percent of the reports.

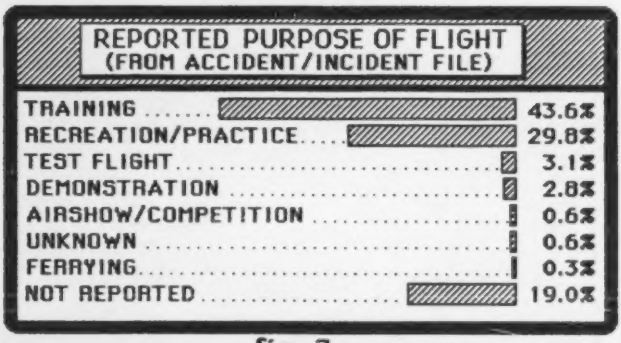

fig. 7

"NEARLY HALF OF THE REPORTED ACCIDENTS AND INCIDENTS LISTED TRAINING AS THE PURPOSE OF THE FLIGHT."

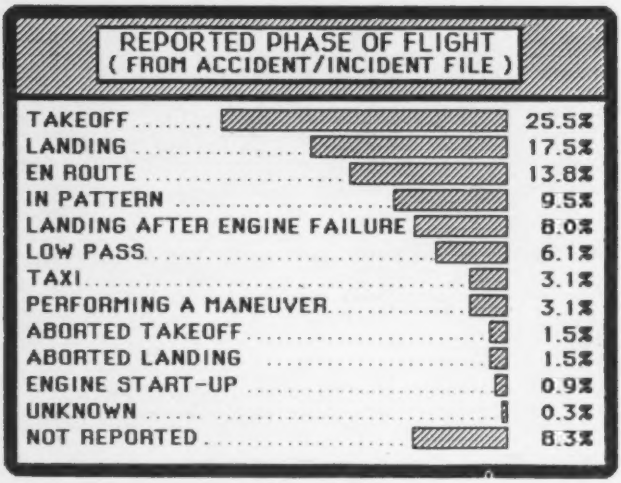

fig. 8

Although 46 percent of the pilots in the airmen file report flying their ultralights from airports, there have been no reports of midair collisions between ultralights and conventional aircraft. ASF has received no reports of property damage caused by an ultralight except to the ultralight venicle itself. A minor injury which occurred during a taxiing incident is the only report of injury to a person not directly participating in the sport. There are no reports of fatalities among non-participants.

Figure 9 lists the factors which were reported to contribute to the accident or incident and the percent of reports which contained reference to each factor. Most (83%) of the reported factors in Figure 9 are related to human failures, not mechanical or structural ones. The task of improving the knowledge, skill and judgment of ultralight pilots is the responsibility of all ultralight instructors. Forty-four percent of the reported accidents happened during training and 50 percent happened with a pilot who had less than 10 hours of ultralight experience indicating that the quality of instruction must improve.

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Two trends which will contribute to improved ultralight instruction are:

1. The FAA exemption which allows the use of two-seat ultralights for instruction; and,
2. An increased awareness of the necessity of proper ultralight training regardless of past flying experience.

Since the ASF Accident/Incident Reporting System is not mandatory, we rely on the ultralight community to continually submit reports. In order to protect the confidentiality of those involved in accidents and incidents and the people who report them, ASF does not record the identity of any person. Information in the reports received by ASF which could be used to identify a particular accident or incident is excluded from the data base. Once the "de-identified" information is entered into the computer, the original reports are destroyed. For this reason, ASF can not respond to inquiries regarding specific accidents or incidents.

* * * * *

The ASF data base continues to increase in numbers. As of April 1984, the ASF had registered 2638 Airmen and 972 Vehicles and received 442 accident/incident reports. We appreciate the efforts of those people who have taken the time to report accidents/incidents to ASF as well as pilots who have registered themselves and their vehicles. All of us who fly ultralights are indebted to these people because it is through their registration with the ASF that safety information can be derived.

ASF would like to acknowledge the support of the Federal Aviation Administration Office of Aviation Safety, Safety Analysis Division. Without their assistance this report would not have been possible.

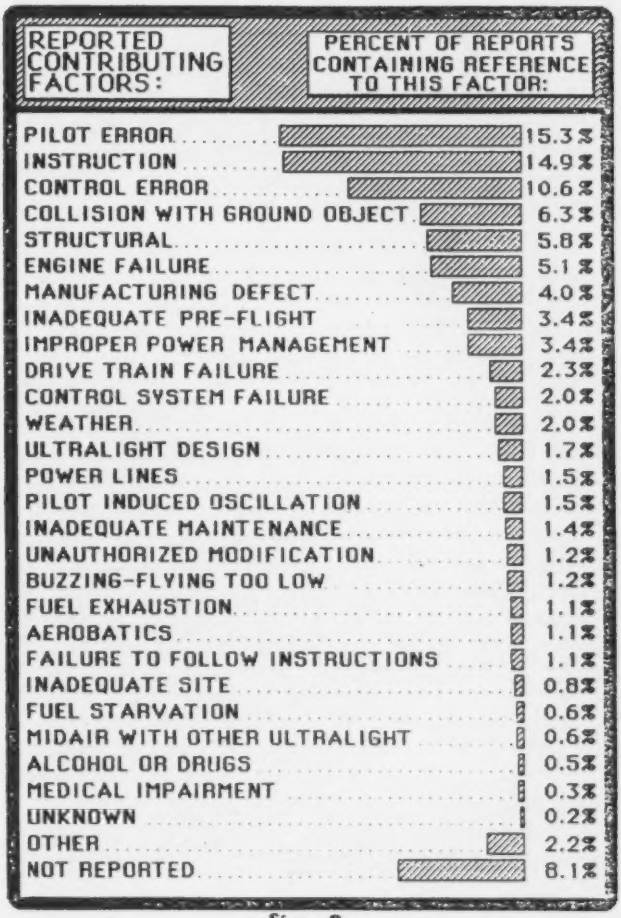

fig. 9

Mr. GLICKMAN. Thank you, Mr. Baker.

Let's complete the other witnesses before we ask questions.

Mr. Poberezny, it is a pleasure to have you here.

Mr. POBEREZNY. Thank you, Mr. Chairman.

What I would like to do is—our statement is here. Everyone has a copy. The background on the association goes up to page 4. I would like to start on page 5.

Voluntary compliance with FAA approved industry programs for ultralight registration and pilot certification has met with limited participation. This has created problems both in and out of the aviation community.

Some local and State governments feel that they must impose their own regulations for the safety of the public, as well as for liability protection. Within the aviation community some pilots and airport operators fear that they are dealing with a sector of aviation that lacks proper knowledge and control.

Local authorities sometimes perceive ultralight as potentially dangerous nuisances because they don't have the legitimacy of FAA registration. In many communities, despite records of safe responsible operation, ultralights have been summarily prohibited by local authorities from use of even federally funded airports, as well as from use of other community facilities.

Lack of uniform ultralight registration has complicated ultralight insurance problems. As an industry we are not even able to determine the exact number of ultralights being built, operated, or where or how they are being used. There is no way of statistically examining ultralight experience and, therefore, no basis for intelligent underwriting by insurance companies. Naturally, insurance companies are reluctant to offer coverage, or if they do, it may be at artificially high rates to cover these unknowns.

The ultralight movement frequently finds itself shunned—or at least looked down upon—by the established aviation community. Although it is estimated that probably one-half of present ultralight operators are licensed pilots, there is a widespread concern, justified or not, that many ultralight fliers do not have the knowledge level to operate safely within the present air space environment.

It is estimated that less than 1 in 20 ultralight vehicles is registered or has some identification. The number of registered pilots is only slightly better.

How can we assure other users of air space, as well as the general public, that ultralight vehicles are being flown safely by operators who have full knowledge of, and full regard for, the "rules of the air"?

As an organization that represents members from all segments of aviation, EAA must be responsive to this concern in order to ensure that the ultralight movement grows in a manner that is best for its long term development.

Through these, its formative years, the ultralight movement has had a good record and shows improvement every day. The majority of ultralight owners have demonstrated a willingness to operate responsibly and safely, to the benefit of themselves, others in the movement, and all aviation.

If any unfortunate accident takes place—or even an incident occurs that perils public safety—the ensuing adverse publicity and media outcry would be magnified tremendously if the cause of the problem were an uncertified operator in an unregistered vehicle.

All of us in aviation would have many difficult questions to answer. The likely result: Probably far, far more regulation of, and restrictions upon, the ultralight movement—and maybe other phases of sport aviation—than are actually justified or warrranted.

Perhaps a bit of prudence now will prevent total suffocation later.

Because we are an organization that represents all phases of aviation, we must look at the situation from all sides and consider all facets of air space usage. We have arrived at certain recommendations which we think will benefit the situation.

In order to foster the growth and development of the ultralight movement, we recommend that the FAA should administer programs that will provide: First, uniform mandatory registration of all ultralight vehicles that operate within part 103. This will give the registration procedure the weight of Federal authority that may help prevent lower governmental units from exercising unneeded and disruptive control over ultralights; second, a minimum standard of recognized operator knowledge tested by a simple written exam that will verify a knowledge level sufficient for safe operation within airspace shared by ultralights and other aircraft; and third, continuation of the policy of no flight physical requirements. Decades of experience with sailplane pilots and some eight years with ultralight pilots have produced no threat to public safety that would justify the need for a qualifying physical examination.

Implementing these recommendations will benefit the public, the aviation community, other air space users, and the ultralight movement.

The public will be assured that ultralight vehicles are being flown by responsible and knowledgable operators and are identifiable through a Federal registration system. They will feel more comfortable with the ultralight environment.

The aviation community will find ultralights easier to accept and integrate into the airspace shared by all. They will know that ultralight operators have knowledge and understanding of the basic rules of the air and that all are operating under consistent guidelines. They may come to realize that the ultralight movement can make a contribution of value to all aviation.

Ultralight operators will benefit from Federal recognition and gain some measure of protection from arbitrary and restrictive regulation by local authorities. They will gain acceptance by other members of the aviation community by demonstrating their knowledge of safe operating procedures.

They will benefit from statistical data that will make insurance easier—and perhaps less expensive—to obtain. Dangerous or unsafe procedures, equipment, materials, et cetera, will be easier to identify and correct. They will gain in their own level of knowledge.

It is in the public interest that the ultralight movement proceed with minimum Government involvement, whether it be Federal,

State, or local. EAA's very simple recommendations will help make this possible.

We are asking only that vehicle registration be made mandatory and that registration be accomplished by the FAA—and that FAA administer a simple written examination—no flight exam—to verify that ultralight operators have sufficient knowledge to operate their vehicles in a safe manner without hazard to the public on the ground or to other users of airspace. Only this, and nothing more.

We feel that these recommendations will help produce orderly, safe growth within the ultralight movement, and will help preserve the freedom it now enjoys.

I would like to add that the many phone calls, many letters that I have received, and visits, it is pretty hard for a society that requires a license to get married, to get buried, for a dog and bicycle, to accept those of us that have nothing but a certificate of knowledge.

And these simple things—we look back at our first EAA flying—brought ultralights together in 1977, and every year has seen an improved product, improved power plant, muffler systems, and improved design. It is an evolution of the free enterprise system, with all groups working closely together to ensure that men and women's dream of flight comes true.

Thank you.

[The prepared statement of Mr. Poberezny follows:]

EXPERIMENTAL AIRCRAFT ASSOCIATION

WITTMAN AIRFIELD, OSHKOSH, WI 54903-2591
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STATEMENT FROM THE EXPERIMENTAL AIRCRAFT ASSOCIATION

TO BE PRESENTED BEFORE THE

HOUSE SUB-COMMITTEE ON TRANSPORTATION, AVIATION AND MATERIALS

PAUL H. POBEREZNY

FOUNDER and PRESIDENT

EXPERIMENTAL AIRCRAFT ASSOCIATION

MAY 21, 1984

Statement from the Experimental Aircraft Association to be presented before the House Sub-Committee on Transportation, Aviation and Materials, on May 21, 1984.

Appearing on behalf of the Experimental Aircraft Association:

Paul H. Poberezny, President

Mr. Chairman and members of the Committee:

The Experimental Aircraft Association appreciates the opportunity to appear before you and present our comments relative to: Emerging Ultralight Aircraft Technology and Public Safety.

BACKGROUND

The Experimental Aircraft Association (EAA) is an active organization devoted to the preservation of our aviation heritage and to the promotion of recreational and general aviation flying.

Our membership of almost 100,000 (including 667 active chapters worldwide) is dedicated to the cause of aviation in all its forms. Our membership, which covers all walks of life and the full spectrum of aviation, includes those who build and fly their own aircraft, recreational sport plane pilots, professional aviators and non-flying aviation enthusiasts. Through our specialized divisions many of our members pursue their particular interests in warbirds, aerobatics, antique/classic aircraft, and ultralight vehicles. Our members are dedicated to the goals of aeronautical progress, aviation education, and flight safety.

Since its beginning EAA has enjoyed a cooperative working relationship with the Federal Aviation Administration (FAA), as well as other aviation organizations, industry associations, and manufacturers. We feel that EAA leadership has produced many benefits for all who are interested in aviation and concerned with the freedom of flight, and has set high standards recognized, and often followed, by aviation throughout the world.

A focal point of EAA is the amateur aircraft builder. These homebuilders have demonstrated their ability to design, build and fly over 10,000 amateur built aircraft responsibly and safely with minimal government regulation and supervision. This activity has produced and stimulated many significant aeronautical and technological advances, made flying a reality for thousands of previous non-flyers, and launched many successful new aviation businesses. Our devotion to our aviation heritage, as well as to continuing aeronautical education and progress, is manifest at the EAA Aviation Center's excellent new museum and library.

And, of course, EAA and EAA Aviation Foundation jointly sponsor the world's foremost and largest aviation event, the EAA Convention and Sport Aviation Exhibition, which takes place in Oshkosh, Wisconsin each summer.

We realize that EAA's background may be familiar to many of you. It is being reiterated here only to emphasize our knowledge of and concern for all aspects of aviation and our strong desire to keep the freedom of flight available to all.

EAA ULTRALIGHT EXPERIENCE

EAA has been involved with ultralights from their inception. EAA member John Moody, who is generally acknowledged to be the "father" of

the ultralight as we know it today, first demonstrated his "powered hang glider" at the EAA Fly-In in Oshkosh in 1976. We formed the EAA Ultralight Association in 1980 but have provided special ultralight activities, educational forums, and flight events at our Annual EAA Convention as far back as 1977. We established a separate Ultralight Fly-In and National Convention in 1982. This convention has grown each year and has proven to be very popular with manufacturers, suppliers, participants and spectators.

EAA recognized ultralight operation as a new segment of aviation - a sport that would intrigue and attract new enthusiasts to the skies; that would stimulate creativeness in airframe and powerplant development; that would encourage study of basic aerodynamics and an understanding of the principles of flight; that would provide participants with new challenges and goals for self-improvement and the acquisition of new skills, while satisfying the desire of men and women to fly. In short, it presented a practical and economical "open door" to aviation - an entry for a new generation of potential aviators into a field much in the need of revitalized enthusiasm and participation.

At this time the still growing EAA Ultralight Association is nationwide and has 26 active chapters devoted specifically to the ultralight movement. Like all EAA members, our ultralight membership is dedicated to principals of self-education, mutual assistance, the improvement and progress of aviation, and freedom of the skies for all. EAA is a division of the National Aeronautic Association, and as such is the sole representative for ultralights in the United States to the FAI (Federation Aeronautique Internationale).

Our members welcome the freedoms and responsibilities provided to ultralight operators by FAR Part 103. As a group the EAA Ultralight Association has worked diligently to protect these freedoms.

We encourage all members of the ultralight community to participate in voluntary pilot competency and vehicle registration programs. At our annual convention, ultralight operators must provide an owner's statement that their ultralight vehicle complies with the intent of Part 103, and that the operator meets certain minimum flight time requirements. We also recommend that this procedure be followed for all EAA chapter-sponsored events.

Recognizing the dangers of self-taught airmanship, we petitioned for and received an exemption that made it legally possible for 2-place, 350 pound empty weight ultralights to be used for flight instruction, and we devised a procedure for the designation and recognition of FAA Certificated Flight Instructors to conduct this training. We also instituted the EAA UPLAP Program which encourages increased operator competency and establishes and recognizes increasing levels of experience and ability. We have collected accident and incident statistics, voluntarily supplied by our members, so that we can identify dangerous and unsafe conditions and suggest appropriate remedies.

An important tool in communicating with the ultralight community is our monthly EAA Ultralight Association magazine, ULTRALIGHT AND THE LIGHT PLANE. This publication provides regular features on flight safety, accident prevention, safe flying techniques, actual accident experience "Education Through Airror", sport pilot medicine, owners reports, forums for the exchange of information and ideas, as well as new product information, ultralight event reports and Association and Chapter news.

These things and more have been done because we believe so strongly in the principle of self-education as a path to safe, responsible operation.

PROBLEMS

Voluntary compliance with FAA approved industry programs for ultralight registration and pilot certification has met with limited participation. This has created problems both in and out of the aviation community. Some local and state governments feel that they must impose their own regulations for the safety of the public, as well as for liability protection. Within the aviation community some pilots and airport operators fear that they are dealing with a sector of aviation that lacks proper knowledge and control. Local authorities sometimes perceive ultralights as potentially dangerous nuisances because they don't have the "legitimacy" of FAA registration. In many communities, despite records of safe responsible operation, ultralights have been summarily prohibited by local authorities from use of even federally funded airports, as well as from use of other community facilities.

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Although it is estimated that probably one-half of present ultralight operators are licensed pilots, there is a widespread concern, justified or not, that many ultralight fliers do not have the knowledge level to operate safely within the present air space environment. It is estimated that less than one in twenty ultralight vehicles is registered or has some identification. The number of registered pilots is only slightly better. How can we assure other users of air space, as well as the general public, that ultralight vehicles are being flown safely by operators who have full knowledge of, and full regard for, the "rules of the air"? As an organization that represents members from all segments of aviation, EAA must be responsive to this concern in order to insure that the ultralight movement grows in a manner that is best for its long term development.

Through these, its formative years, the ultralight movement has had a good record and shows improvement every day. The majority of ultralight owners have demonstrated a willingness to operate responsibly and safely, to the benefit of themselves, others in the movement, and all aviation. If any unfortunate accident takes place -- or even an incident occurs that perils public safety -- the ensuing adverse publicity and media outcry would be magnified tremendously if the cause of the problem were an uncertified operator in an unregistered vehicle. All of us in aviation would have many difficult questions to answer. The likely result: probably <u>far</u>, <u>far</u> more regulation of, and restrictions upon, the ultralight movement (and maybe other phases of sport aviation) than are actually justified or warranted.

Perhaps a bit of prudence now will prevent total suffocation later.

SOLUTIONS

Because we are an organization that represents all phases of aviation, we must look at the situation from all sides and consider all facets of air space usage. We have arrived at certain recommendations which we think will benefit the situation.

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2. A minimum standard of recognized operator knowledge tested by a simple written exam that will verify a knowledge level sufficient for safe operation within airspace shared by ultralights and other aircraft.
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It is in the public interest that the ultralight movement proceed with minimum government involvement, whether it be federal, state or local. EAA's very simple recommendations will help make this possible. We are asking only that vehicle registration be made mandatory and that registration be accomplished by the FAA -- and that FAA administer a simple written examination (no flight exam) to verify that ultralight operators have sufficient knowledge to operate their vehicles in a safe manner without hazard to the public on the ground or to other users of airspace. Only this, and nothing more.

We feel that these recommendations will help produce orderly, safe growth within the ultralight movement, and will help preserve the freedom it now enjoys.

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Mr. GLICKMAN. Thank you very much.

Mr. Muth.

Mr. MUTH. Thank you, Mr. Chairman. My name is Roy Muth. I serve as president and chief executive officer of the Powered Ultralight Manufacturers Association.

The Powered Ultralight Manufacturers Association is a nonprofit trade association that has as its members manufacturers who build powered ultralight vehicles, manufacturers who supply components used in the construction of those vehicles, and companies that provide various types of services that support the ultralight industry.

Present in the hearing room this afternoon are senior executives from three member companies who serve on PUMA's board of directors. I would like to introduce Mr. Lyle Byrum, president, Eipper Aircraft Inc.; Mr. Thomas Peghiny, engineering manager, Pioneer International Aircraft; and Lawrence Gordon, vice president/general manager, Zimmer Aero Tech Corp.

PUMA has three membership categories. Regular members are manufacturers of ultralight vehicles. Associate members are those manufacturers of component parts who choose to have a seat on the board of directors.

Affiliate members are those manufacturers of component parts who do not choose to have a seat on the board of directors and those companies involved in supplying services to the industry. At this time PUMA has seven regular members and six affiliate members.

A complete listing of PUMA's members and the members of the association's board of directors is attached to my written submission.

On behalf of the association's members, I would like to thank the members of the subcommittee for being given an opportunity to comment on the question "How much or how little FAA regulation and control are needed to ensure that ultralight aircraft materials, design, construction, and operation are responsible to the freedoms and constraints of FAR, part 103, and are adequate to the demands of public safety?"

By way of background, the Powered Ultralight Manufacturers Association was founded in late 1980 and incorporated in the State of Tennesseee on March 4, 1982. The purposes for which the corporation was organized, as listed in the association charter, are: to believe and promote the industry of ultralight powered aircraft by engaging in standards development, product certification, gathering and distributing information of interest to members, representing members before Congress, State legislatures, and other governmental agencies; and to engage in any other lawful activity which benefits and promotes the industry of ultralight powered aircraft.

A copy of PUMA's charter is also attached to my written submission.

Prior to and for a time after its incorporation, PUMA was managed by executives from its member companies. Mr. Lyle Byrum, introduced earlier, served as the association's president during that time.

In the fall of 1982, the membership decided to transfer management of the association from volunteers to a professional staff. In December 1982, I was elected to the position I now hold and, at the

same time, the association's offices were moved from Chattanooga, TN, to northern Virginia. Our office is now located at 7537 Little River Turnpike, suite 350, Annandale, VA.

At this time I would like to describe what has been accomplished during the 18 months which have elapsed since December 1982.

As you know, in September 1982, the Federal Aviation Administration published part 103 FAR which set forth the operating requirements for ultralight vehicles.

Without going through the portion that deals with the full scope of the regulation, I wanted to make the chairman aware that the regulations published by the FAA had several parts of particular interest to PUMA's members. The first was the definition of an ultralight vehicle as one that was used or intended for use for manned operation in the air by a single occupant.

It also had to be intended for use for recreation or sport purposes only, could not have been certificated as another category of vehicle and, if powered, had to weigh less than 254 pounds empty weight, which excluded floats and safety devices.

In addition, it had to have a fuel capacity not exceeding 5 U.S. gallons, could not be capable of more than 55 knots air speed at full power in level flight, and had to have a power-off stall speed that did not exceed 24 knots.

I emphasize these requirements only to highlight a major problem that exists today, that being that there are aircraft being offered for sale today—as ultralights—that do not meet the criteria set forth in part 103.

For those manufacturers who are complying with the regulation, it is becoming increasingly difficult to compete in the marketplace. If your design is not inhibited by restrictions that deal with eight or stall speed, it is quite possible to build an aircraft that looks and handles better than those designed by engineers meeting those requirements. Mr. Byrum can provide more details on the impact of such illegal activity on manufacturers who are building in accordance with the FAA criteria.

PUMA takes the position that the FAA regulatory guidelines contained in part 103.1 Applicability—the definition—are adequate. As opposed to a need for more regulation, we support the view that the need is for strict enforcement of the current regulation.

In this regard, PUMA applauds the FAA enforcement action requiring documentation of all vehicles eligible for operation under part 103 as described in advisory circular 103-7, Subject: The Ultralight Vehicle.

We also applaud the Experimental Aircraft Association's decision to require that all ultralights participating in EAA-sponsored events bear certificates demonstrating compliance with part 103.1 Applicability, FAR.

The second part of part 103 of particular interest to ultralight manufacturers was that dealing with the FAA's expectation, expressed in the summary statement published in the Federal Register with the rule, that the ultralight community take positive action to develop a vehicle certification program in a timely manner and to gain FAA approval for implementation of the program.

At about the same time as the publication of part 103, the FAA was circulating a draft advisory circular written to provide guidance on the preparation of both ultralight pilot and vehicle safety and registration programs.

In this circular, the FAA spelled out parameters for a pilot competency program, for a vehicle registration program and, of primary importance to the manufacturers, for a vehicle airworthiness program.

In the guidance and suggestions to be considered in developing an airworthiness program, the FAA set forth certain design criteria considerations.

In response to the FAA directive, the members of PUMA undertook the development of an airworthines standard for powered ultralight vehicles. Earlier I mentioned that the FAA had provided guidance in terms of what was believed to be necessary.

In response, PUMA developed a document that covers a multitude of performance and design requirements. It was written with an eye on the FAA guidance statement.

In early 1983, we formed an Airworthiness Standard Committee which spent two 2-day sessions working out the details of the final document. Subsequently, the standard was voted on and approved by the full membership.

The standard addresses, among other things, performance, flight controlability and maneuverability, stability, stalls, spinning, ground and water handling characteristics, miscellaneous flight requirements, structure, flight loads, control surface and system loads, ground loads, emergency landing conditions, design and construction, control surfaces, personnel and cargo accommodations, the power plant, the fuel system, operating limitations and information, markings and placards, vehicle flight manual, engines and drive systems and, finally, propellers.

PUMA has applied for and received a copyright on the publication and has made it available to the general public.

PUMA's airworthiness standards are, wherever possible, performance related. A deliberate effort has been made to ensure that the standard does not inhibit new vehicle designs made possible by new technology or which reflect the demands of the marketplace.

We believe that PUMA's airworthiness standard for ultralight vehicles represents the minimum consistent with safe flying characteristics and structural soundness of ultralights.

Last December, the PUMA board of directors approved two important procedures related to the standard. The first is the procedure to be used to revise the standard.

It is important to emphasize that we are encouraging the participation of both public and private sector interests in the revision of PUMA's standard. This has been done by incorporating a public review step in our revision process.

We have written to 30 groups who share our interests in flying safety, inviting them to suggest persons to be a part of a public review group whose members would be asked to comment on revisions to the standard.

Since PUMA's standards development program depends in part upon analysis of ultralight accident/injury statistics and investigations, we commend the National Transportation Safety Board for

the efficiency of its ultralight data collection program and for sharing its information with the industry.

A detailed description of the standards development process and a copy of the standard itself are contained in a document entitled Airworthiness Standards for Powered Ultralight Vehicles. Copies of the document have been included with our written submission.

The second procedure approved by the PUMA Board last December involves certification of ultralight models. Ours is a two-part certification program which requires, first, that an airframe and powerplant mechanic attest that the model meets the requirements set forth in part 103.1—weight, stall speed, et cetera.

The second part of the progarm involves the manufacturer's certification that the model meets all the requirements set forth in PUMA's airworthiness standard.

The certification program is open to PUMA members and nonmembers alike. We encourage all ultralight manufacturers to participate in the association's certification program.

In this regard, the association welcomes all public and private sector activity which stimulates involvement in PUMA's certification program by all responsible powered ultralight manufacturers.

PUMA believes that the safety concerns of the flying public will be demonstrated in the marketplace by purchase of ultralights bearing the PUMA certification label. We base this belief on our knowledge of the history of the hang gliding industry.

Beset by serious safety concerns, the Hang Glider Manufacturers Association developed a stringent airworthiness standard. In short order, only those manufacturers building to that standard were a viable presence in the market. Mr. Tom Peghiny, introduced earlier in my presentation, served as a member of the HGMA Board of Directors and on the HGMA Airworthiness Committee and can amplify on this point.

A detailed description of the certification process and copies of the checklists that must be completed and submitted with the manufacturer's request for certification are contained in a document entitled Certification Program Procedural Guide. Copies of that document have also been included with our written submission.

On February 3, 1984, PUMA submitted both its stnadards development and model certification programs to the FAA seeking approval for implementation.

On April 5, 1984, the Federal Aviation Administration informed PUMA that the vehicle airworthiness program, as just described, is recognized as the kind of national, community-developed program envisioned at the issuance of part 103. A copy of the FAA letter is included as a part of my written submission.

Up to this point, I have described our standards and certification program in some detail. Let me spend a few more minutes to describe some of the other association programs.

One of the major problems facing the ultralight community has to do with insurance. In the case of the members, we are talking about product liability insurance. PUMA is working to establish a cost effective product liability insurance program that would be open to manufacturers who participate in the PUMA certification program.

We are also working to promote the sale of ultralight vehicles by sponsoring an ultralight exposition to be held in the Houston Astro Hall from August 30, 1984, through September 2, 1984.

We view both of these activities as essential to fostering the growth of the ultralight industry and increasing our membership.

To return to the point of this hearing, we have mentioned several groups, private and public, we have worked with to put our programs in place. I hope I have done justice to their work.

I have not yet mentioned the Aircraft Owners and Pilots Association and would be remiss if I did not endorse and state PUMA's support for AOPA's pilot competency and vehicle registration programs.

Several of PUMA's members include AOPA's registration materials with the ultralight when it is delivered to the consumer.

In summary, PUMA endorses the concept of self-regulation of ultralight operations embodied in part 103 FAR. We believe that our programs will contribute to the achievement of a maximum of safety without additional regulation.

We respectfully request that the subcommittee take no actions that would tend to inhibit the growth of a sport that has given the average recreationist the opportunity and the ability to fly.

Thank you.

[The prepared statement of Mr. Muth follows:]

POWERED ULTRALIGHT MANUFACTURERS ASSOCIATION

STATEMENT SUBMITTED

TO THE

U.S. HOUSE OF REPRESENTATIVES COMMITTEE

ON

SCIENCE AND TECHNOLOGY

SUBCOMMITTEE ON TRANSPORTATION, AVIATION AND MATERIALS

ON

POWERED ULTRALIGHTS, THE FEDERAL AVIATION ADMINISTRATION AND THE PUBLIC SAFETY

Roy W. Muth
President and Chief Executive Officer
Powered Ultralight Manufacturers Association
7535 Little River Turnpike
Suite 350
Annandale, Virginia 22003
May 21, 1984

Mr. Chairman, my name is Roy Muth. I serve as President and Chief Executive Officer of the Powered Ultralight Manufacturers Association (PUMA).

The Powered Ultralight Manufacturers Association is a nonprofit trade association that has as its members manufacturers who build powered ultralight vehicles, manufacturers who supply components used in the construction of those vehicles, and companies that provide various types of services that support the ultralight industry.

Present in the hearing room this afternoon are senior executives from three member companies who serve on PUMA's Board of Directors. I would like to introduce:

Mr. Lyle Byrum
President
Eipper Aircraft Inc.
26531 Ynez Road
Temecula, CA 92390

Mr. Thomas Peghiny
Engineering Manager
Pioneer International Aircraft
P.O. Box 631
Manchester, CT 06040

Mr. Lawrence Gordon
Vice President/General Manager
Zimmer Aero Tech Corporation
1171 West McNab Road
Ft. Lauderdale, FL 33309

PUMA has three membership categories. Regular Members are manufacturers of ultralight vehicles. Associate Members are those manufacturers of component parts who choose to have a seat on the Board of Directors. Affiliate Members are those manufacturers of component parts who do not choose to have a seat on the Board of Directors and those companies involved in supplying services to the industry. At this time PUMA has seven Regular Members and six Affiliate Members. A complete listing of PUMA's members and the

members of the association's Board of Directors is attached to my written submission.

On behalf of the association's members, I would like to thank the members of the subcommittee for being given an opportunity to comment on the question "How much or how little FAA regulation and control are needed to ensure that 'ultralight' aircraft materials, design, construction and operation are responsible to the freedoms and constraints of FAR Part 103 and are adequate to the demands of public safety?"

By way of background, the Powered Ultralight Manufacturers Association was founded in late 1980 and incorporated in the state of Tennessee on March 4, 1982. The purposes for which the corporation was organized, as listed in the association charter, are:

- to benefit and promote the industry of ultralight powered aircraft by engaging in standards development, product certification, gathering and distributing information of interest to members, representing members before Congress, state legislatures, and other governmental agencies; and
- to engage in any other lawful activity which benefits and promotes the industry of ultralight powered aircraft.

A copy of PUMA's charter is also attached to my written submission.

Prior to and for a time after its incorporation, PUMA was managed by executives from its member companies. Mr. Lyle Byrum, introduced earlier, served as the association's president during that time. In the fall of 1982, the membership decided to transfer management of the association from volunteers to a professional staff. In December

1982, I was elected to the position I now hold and, at the same time, the association's offices were moved from Chattanooga, Tennessee to northern Virginia. Our office is now located at:

7535 Little River Turnpike
Suite 350
Annandale, Virginia 22003

At this time, I would like to describe what has been accomplished during the eighteen months which have elapsed since December 1982.

As you know, in September 1982, the Federal Aviation Administration published Part 103 FAR which set forth the operating requirements for ultralight vehicles. In the summary language which accompanied the rule, the FAA stated that it had chosen not to promulgate federal regulations regarding pilot certification, vehicle certification and vehicle registration, preferring that the ultralight community assume the initiative for the development of these important safety programs. It went on to say that the ultralight community was expected to take positive action to develop these programs in a timely manner and gain FAA approval for their implementation. It concluded by warning that, should this approach fail to meet FAA safety objectives, further regulatory action would be necessary. In my view, the FAA had offered the ultralight community a unique opportunity to demonstrate its ability to self-regulate.

The regulations published by the FAA had several parts of particular interest to PUMA's members. The first was the definition of an ultralight vehicle as one that was used or intended for use for manned operation in the air by a single occupant. It also had to be intended for usa for recreation or sport purposes only, could not have been certificated as another category of vehicle and, if

powered, had to weigh less than 254 pounds empty weight, which excluded floats and safety devices. In addition, it had to have a fuel capacity not exceeding five U.S. gallons, could not be capable of more than 55 knots air speed at full power in level flight, and had to have a power-off stall speed that did not exceed 24 knots.

I emphasize these requirements only to highlight a major problem that exists today, that being that there are aircraft being offered for sale today -- as ultralights -- that do not meet the criteria set forth in Part 103. For those manufacturers who are complying with the regulation, it is becoming increasingly difficult to compete in the marketplace. If your design is not inhibited by restrictions that deal with weight or stall speed, it is quite possible to build an aircraft that looks and handles better than those designed by engineers meeting those requirements. Mr. Byrum can provide more details on the impact of such illegal activity on manufacturers who are building in accordance with the FAA criteria.

PUMA takes the position that the FAA regulatory guidelines contained in Part 103.1 Applicability (the definition) are adequate. As opposed to a need for more regulation, we support the view that the need is for strict enforcement of the current regulation.

In this regard, PUMA applauds the FAA enforcement action requiring documentation of all vehicles eligible for operation under Part 103 as described in Advisory Circular 103-7, Subject: The Ultralight Vehicle. We also applaud the Experimental Aircraft Association's decision to require that all ultralights participating in EAA-sponsored events bear certificates demonstrating compliance with Part 103.1 Applicability, FAR.

The second part of Part 103 of particular interest to ultralight manufacturers was that dealing with the FAA's expectation, expressed in the summary statement published in the Federal Register with the rule, that the ultralight community take positive action to develop a vehicle certification program in a timely manner and to gain FAA approval for implementation of the program.

At about the same time as the publication of Part 103, the FAA was circulating a draft advisory circular written to provide guidance on the preparation of both ultralight pilot and vehicle safety and registration programs. The guidance was presented in an effort to standardize the requirements and provide a basis for FAA approval for implementation of such programs. In this circular, the FAA spelled out parameters for a pilot competency program, for a vehicle registration program and, of primary importance to the manufacturers, for a vehicle airworthiness program.

In the guidance and suggestions to be considered in developing an airworthiness program, the FAA set forth certain design criteria considerations, suggesting that particular attention be given to fatigue strength, flutter, wing strength, control systems, control surfaces and power plants. It suggested ground testing, as appropriate, prior to flight tests and also suggested that flight testing should be undertaken to demonstrate that the vehicle could be safely controlled throughout its normal range of speed and throughout all maneuvers to be executed. It noted that the vehicle should not have hazardous operating characteristics or any unsafe design feature. During the flight test program, the FAA indicated that emphasis should be placed on performance, flight characteristics, stability,

structure, control surface and system loads, surface and system loads, horizontal tail surfaces, ailerons, wings, flaps and special devices and emergency landing conditions.

In response to the FAA directive, the members of PUMA undertook the development of an airworthiness standard for powered ultralight vehicles. Earlier I mentioned that the FAA had provided guidance in terms of what was believed to be necessary. In response, PUMA developed a document that covers a multitude of performance and design requirements. It was written with an eye on the FAA guidance statement.

In early 1983 we formed an Airworthiness Standard Committee which spent two two-day sessions working out the details of the final document. Subsequently, the standard was voted on and approved by the full membership. The standard addresses, among other things, performance, flight controllability and maneuverability, stability, stalls, spinning, ground and water handling characteristics, miscellaneous flight requirements, structure, flight loads, control surface and system loads, control surface loads, ground loads, emergency landing conditions, design and construction, control surfaces, control systems, personnel and cargo accommodations, the power plant, the fuel system, operating limitations and information, markings and placards, vehicle flight manual, engines and drive systems and, finally, propellers.

PUMA has applied for and received a copyright on the publication and has made it available to the general public.

PUMA's airworthiness standards are, wherever possible, performance related. A deliberate effort has been made to ensure that

the standard does not inhibit new vehicle designs made possible by new technology or which reflect the demands of the marketplace.

We believe that PUMA's airworthiness standard for ultralight vehicles represents the minimum consistent with safe flying characteristics and structural soundness of ultralights.

Last December, the PUMA Board of Directors approved two important procedures related to the standard. The first is the procedure to be used to revise the standard. It is important to emphasize that we are encouraging the participation of both public and private sector interests in the revision of PUMA's standard. This has been done by incorporating a public review step in our revision process. We have written to 30 groups who share our interests in flying safety, inviting them to suggest persons to be a part of a public review group whose members would be asked to comment on revisions to the standard.

Since PUMA's standards development program depends in part upon analysis of ultralight accident/injury statistics and investigations, we commend the National Transportation Safety Board for the efficiency of its ultralight data collection program and for sharing its information with the industry.

A detailed description of the standards development process and a copy of the standard itself are contained in a document entitled Airworthiness Standards for Powered Ultralight Vehicles. Copies of the document have been included with our written submission.

The second procedure approved by the PUMA Board last December involves certification of ultralight models. Ours is a two-part certification program which requires, first, that an airframe and

power plant mechanic attest that the model meets the requirements set forth in Part 103.1 (weight, stall speed, etc.). The second part of the program involves the manufacturer's certification that the model meets all the requirements set forth in PUMA's airworthiness standard.

The certification program is open to PUMA members and non-members alike. We encourage all ultralight manufacturers to participate in the association's certification program. In this regard, the association welcomes all public and private sector activity which stimulates involvement in PUMA's certification program by all responsible powered ultralight manufacturers.

PUMA believes that the safety concerns of the flying public will be demonstrated in the marketplace by purchase of ultralights bearing the PUMA certification label. We base this belief on our knowledge of the history of the hang gliding industry. Beset by serious safety concerns, the Hang Glider Manufacturers Association developed a stringent airworthiness standard. In short order, only those manufacturers building to that standard were a viable presence in the market. Mr. Tom Peghiny, introduced earlier in my presentation, served as a member of the HGMA Board of Directors and on the HGMA Airworthiness Committee and can amplify on this point.

A detailed description of the certification process and copies of the checklists that must be completed and submitted with the manufacturer's request for certification are contained in a document entitled Certification Program Procedural Guide. Copies of that document have also been included with our written submission.

On February 3, 1984, PUMA submitted both its standards development and model certification programs to the FAA seeking approval for implementation.

On April 5, 1984 the Federal Aviation Administration informed PUMA that the vehicle airworthiness program, as just described, is recognized as the kind of national, community-developed program envisioned at the issuance of Part 103. A copy of the FAA letter is included as a part of my written submission.

Up to this point, I have described our standards and certification program in some detail. Let me spend a few more minutes to describe some of the other association programs.

One of the major problems facing the ultralight community has to do with insurance. In the case of the members, we are talking about product liability insurance. PUMA is working to establish a cost effective product liability insurance program that would be open to manufacturers who participate in the PUMA certification program.

We are also working to promote the sale of ultralight vehicles by sponsoring an ultralight exposition to be held in the Houston Astro Hall from August 30, 1984 through September 2, 1984.

We view both of these activities as essential to fostering the growth of the ultralight industry and increasing our membership.

To return to the point of this hearing, we have mentioned several groups, private and public, we have worked with to put our programs in place. I hope I have done justice to their work.

I have not yet mentioned the Aircraft Owners and Pilots Association (AOPA) and would be remiss if I did not endorse and state PUMA's support for AOPA's pilot competency and vehicle registration programs. Several of PUMA's members include AOPA's registration materials with the ultralight when it is delivered to the consumer.

In summary, PUMA endorses the concept of self-regulation of ultralight operations embodied in Part 103 FAR. We believe that our programs will contribute to the achievement of a maximum of safety without additional regulation. We respectfully request that the subcommittee take no actions that would tend to inhibit the growth of a sport that has given the average recreationist the opportunity and the ability to fly.

Thank you.

38-948 O - 84 - 6

00201 CHARTER 00921

OF

POWERED ULTRALIGHT MANUFACTURERS ASSOCIATION, INC.

The undersigned natural person, having capacity to contract and acting as the incorporator of a corporation under the Tennessee General Corporation Act, adopts the following charter for such corporation:

1. The name of the corporation is POWERED ULTRALIGHT MANUFACTURERS ASSOCIATION, INC.

2. The duration of the corporation is perpetual.

3. The address of the principal office of the corporation in the State of Tennessee shall be P. O. Box 581, Chattanooga, Hamilton County, Tennessee 37401.

4. The corporation is not for profit.

5. The purpose or purposes for which the corporation is organized are:

To benefit and promote the industry of ultralight powered aircraft by engaging in standards development, product certification, gathering and distributing information of interest to members, representing members before Congress, State legislatures, and other governmental agencies; and to engage any other lawful activity which benefits and promotes the industry of ultralight powered aircraft.

6. This corporation is to have members.

7. Other provisions: None.

I, the undersigned, apply to the State of Tennessee, by virtue of the laws of the land, for the Charter of Incorporation for the purposes declared in the foregoing instrument.

WITNESS my hand this 4TH day of March, 1982.

Tracy H. Knauss

TRACY H. KNAUSS, INCORPORATOR

POWERED ULTRALIGHT MANUFACTURERS ASSOCIATION
PUMA
7535 LITTLE RIVER TURNPIKE
SUITE 350
ANNANDALE, VIRGINIA 22003
(703) 642-5859

PUMA MEMBERSHIP LIST

Advanced Aviation, Inc.
323 North Ivey Lane
Orlando, FL 32811
(305) 298-2920

Azusa Engineering, Inc.
1542 Industrial Park Street
Covina, CA 91722
(213) 967-4167

Cuyuna Engine Company
P.O. Box 116
Crosby, MN 56441
(218) 546-8313

Eipper Aircraft Inc.
26531 Ynez Road
Temecula, CA 92390
(714) 676-3228

Glider Rider
P.O. Box 6009
Chattanooga, TN 37401
(615) 867-4970

JECO Propellors
1905 North Marshall Avenue
Gillespie Airport, Hanger 25
El Cajon, CA 92020
(619) 448-0656

Kolb Company, Inc.
RD 3, Box 38
Phoenixville, PA 19460
(215) 948-4136

Pioneer International Aircraft
P.O. Box 631
Manchester, CT 06040
(203) 871-6135

Rotec Engineering, Inc.
P.O. Box 220
Duncanville, TX 75116
(214) 298-2505

Ultra Engines Corporation
1171 West McNab Road
Ft. Lauderdale, FL 33309
(305) 971-7720

Ultralight Aircraft Magazine
16200 Ventura Blvd., Suite 201
Encino, CA 91436
(213) 986-8400

Worldwide Ultralite Industries Inc.
27711 Interstate 10
Katy, TX 77450
(713) 392-7000

Zimmer Aero Tech Corporation
1171 West McNab Road
Ft. Lauderdale, FL 33309
(305) 973-0355

POWERED ULTRALIGHT MANUFACTURERS ASSOCIATION
PUMA
7535 LITTLE RIVER TURNPIKE
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ANNANDALE, VIRGINIA 22003
(703) 642-5859

PUMA BOARD OF DIRECTORS

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President
Rotec Engineering, Inc.
P.O. Box 220
Duncanville, TX 75116

Mr. Fredrick M. Bell
President
Worldwide Ultralite Industries Inc.
27711 Interstate 10
Katy, TX 77450

Mr. Lyle Byrum
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Mr. Lawrence Gordon
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P.O. Box 631
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Mr. Wayne Richter
President
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323 North Ivey Lane
Orlando, FL 32811

US Department
of Transportation
Federal Aviation
Administration

800 Independence Ave., S.W.
Washington D.C. 20591

APR 5 1984

Mr. Roy W. Muth
President and Chief Executive Officer
PUMA
7535 Little River Turnpike
Annandale, Virginia 22003

Dear Roy:

The enclosed copy of my letter to Mr. John Baker recognizes the Powered Ultralight Manufacturers Association (PUMA) vehicle airworthiness program as being the kind of national, community-developed program envisioned at the issuance of Part 103. I believe this recognition satisfies the concerns expressed in your letter to me of February 3.

I want to thank you and the Ultralight Manufacturers, who are members of PUMA, for all their dedicated work and expenditure of monies in the development of the vehicle airworthiness program.

Sincerely,

Walter S. Huffsey
Associate Administrator
for Aviation Standards

Enclosure

US Department
of Transportation
Federal Aviation
Administration

800 Independence Ave. S.W.
Washington, D.C. 20591

APR 5 1984

Mr. John Baker
President, AOPA Air Safety Foundation
421 Aviation Way
Frederick, Maryland 21701

Subject: Recognition of Ultralight Vehicle Safety Programs

Dear Mr. Baker:

On September 2, 1982, the Federal Aviation Administration (FAA) promulgated Federal Aviation Regulations Part 103, Ultralight Vehicle, Operating Requirements. An integral part of the regulatory philosophy embodied in that regulation was the expectation that operating standards and safety programs would be developed by the ultralight community to foster safety in an atmosphere of self-regulation. The FAA has reviewed the standards, procedures, and documents contained in the AOPA Air Safety Foundation's (ASF) ultralight safety programs, and acknowledges that they are consistent with the original intent of Part 103.

Pilot Competency. The FAA recognizes ASF's ultralight vehicle competency program as the kind of national, community-developed program envisioned at the issuance of Part 103. The FAA will recognize, as proof of achievement of the ASF standard of competency, documents issued under the ASF's ultralight vehicle pilot competency program.

Vehicle Registration. The FAA will recognize registration numbers issued under, and vehicle marking done in accordance with, the ASF's ultralight vehicle registration program, as having been done under a national, community-developed program of the kind envisioned at the issuance of Part 103.

Vehicle Airworthiness. The FAA recognizes the Powered Ultralight Manufacturers Association's (PUMA) vehicle airworthiness program as being the kind of national, community-developed program envisioned at the issuance of Part 103. PUMA labels and letters of compliance are recognized as evidence that a vehicle meets the standards of the PUMA vehicle certification program.

We commend the AOPA Air Safety Foundation for its role in coordinating the efforts of responsible ultralight community members in the design and execution of these programs.

Sincerely,

A.J. BRODERICK

Walter S. Luffsey
Associate Administrator
for Aviation Standards

cc: Roy Muth, PUMA

Mr. GLICKMAN. Thank you.

The last witness is Mr. Charles Barclay, with the American Association of Airport Executives.

Mr. BARCLAY. Thank you, Mr. Chairman.

I would like to summarize our statement.

Mr. GLICKMAN. Your entire statement will appear in the record.

Mr. BARCLAY. I am Charles Barclay, the vice president of the American Association of Airport Executives. With me is Paul Bollinger, our vice president of public affairs.

AAAE is a professional membership association which represents over 900 airport executives who manage over 600 airports nationwide, and we do represent airport executives from the largest to some of the smallest airports in the country.

On behalf of our membership, we appreciate the opportunity to present our view to the committee on the subject "emerging ultralight aircraft technology and public safety." To say that the ultralight issue has caused a great deal of concern and confusion among airport managers, would simply be an understatement of the facts.

In reflecting on the title of this hearing, it makes us feel better that even Congress has not fully been able to comprehend the FAA's decision to call ultralights, vehicles and not aircraft. However, I wouldn't want to be the one to tell the Wright brothers they were flying a vehicle and not an aircraft.

In restrospect, the decision could go easy on the new ultralight industry—may have been a detriment to the ultralights themselves. And we attempt to develop our reasoning behind that in our testimony.

But let me summarize by saying we want to help create the next generation of pilots, the next generation of safe and careful pilots. We don't particularly care about helping to create the next generation of dare devils.

Self-regulation has been talked about a lot here today. And self-regulation is fine. It is self-deregulation that I suppose causes our members concern.

From the airport manager's perspective, there are several major questions that need to be answered regarding ultralights and their operations. The first may well be what exactly is a ultralight.

We understand the physical characteristics of it and what went into the decisions concerning weight, speed, and fuel capacity. But the legal definition of ultralight leave us confused.

The FAA has ruled that the ultralight is a vehicle and not an aircraft. By doing this, the FAA has created a new aeronautical activity.

It is one that neither requires a pilot's license nor a certificated aircraft. Yet because the ultralight has been classified as an aeronautical activity, it is granted almost all of the rights and privileges at an airport without any of the obligations required of aircraft operators.

We place quotation marks around classified, because as you can see in our attached documents, the one issued by the FAA Director of Airport Standards states that ultralights are considered an aeronautical activity. But in reviewing FAA's airports compliance requirements, by which all federally obligated airports must abide,

an aeronautical activity is "any activity which involves, makes possible, or is required for the operation of aircraft."

If a ultralight is a vehicle and not an aircraft, then how can it be an aeronautical activity?

To further confuse the issue, the FAA advisory Circular 1036, ultralight vehical operation, freely interchanges the term "ultralight" and "aircraft" when discussing safe operations on the airport.

This is a major issue for airports, because all aeronautical activities, at least under the general definition of that phrase, are not necessarily compatible with all users of an airport.

When a situation of this nature arises, it is up to the airport manager to decide, in the absence of a FAA decision, in the interests of safety, what, if any, operations should be restricted.

And depending on the size, type, speed of the majority of users of an airport, a manager may even have to prohibit certain aeronautical activities. Some examples of this would be restrictions or prohibition of parachuting, for instance, on the active runway, ballooning, towing gliders, or banner towing.

But unfortunately, when some small airports, in a few cases with towers, corporate jet traffic, and even commercial passenger traffic, have prohibited ultralights, they were told by FAA that they had to allow ultralights on the airport because the airport had accepted Federal funds.

It seems ironic to us that the acceptance of Federal funds might require an airport to be less safe. If the ultralight had a compatible landing speed with other users of an airport and if FAA had promulgated adequate operational standard procedures as they do for other aircraft, airport management would be more than willing to accommodate them.

But since they don't, and they don't have experienced operators in some instances, and they generally don't have radios, airport managers at some airports have judiciously made a decision based on safety to require certificated aircraft and licensed pilots at their fields.

As an analogy, some of these very same compatibility comparisons could be made with State highway departments in posting signs prohibiting mopeds and bicycles on the interstate highway system.

However, Mr. Chairman, you can imagine what would happen if the Federal Highway Administration said that Interstate I-35 between McPherson and Newton isn't really that busy so mopeds and bicycles must be allowed to use this section of interstate. That is exactly what the FAA has done at several airports that wanted to prohibit ultralights.

Again, this includes some airports with towers and even some with commercial passenger operations where both the airport operator and the tower chief had recommended banning ultralights, but other personnel in FAA had required that they be able to use the airport.

This is only one side of the coin. The other side deals with the problems an airport faces when they have made or FAA has forced them to make the decision to allow ultralight operations.

Because ultralights try to avoid other aircraft in and around the airports, they often do not fly the standard traffic pattern. In fact, we have on record several cases where ultralight pilots have simply ignored the pattern and for that matter all the airraft in it and landed on the active runway.

At the present time the FAA expects each airport to establish operating procedures for ultralights using the airport. This has put the airport in the position of being a mini-FAA flight standards and air traffic office which is something airports should not, legally cannot and are not qualified to be.

By making airports responsible for ultralights, just as certificated airports are presently and we hope temporarily are responsible for all of the fueling that takes place on an airport, the airport is once again placed in a position of regulating an activity that it has no expertise or desire to regulate and which is truly the responsibility of FAA.

It is our recommendation that at least regulations governing the operation of ultralight pilots be expanded from its present one paragraph in FAR 103 to include many of the basic regulations contained in FAR part 91 which governs air traffic and general operating rules.

The FAA should also establish standard air traffic procedures to be followed at airports that have ultralight operations.

Finally, and most importantly, immediately if an airport makes a decision to restrict or prohibit ultralights, the FAA should not under any circumstance reverse the decision if it continues to maintain a hands-off approach to regulating the safety of ultralights and their impact on other users.

Thank you, Mr. Chairman. And I would be happy to answer questions. I apologize if some of the definitional issues here are a little confusing, but as I said before, we ourselves are a little confused.

[The prepared statement of Mr. Barclay follows:]

American Association of Airport Executives
2301 M STREET, N.W. ■ WASHINGTON, D.C. 20037 ■ (202) 331-8994

TESTIMONY
OF THE
AMERICAN ASSOCIATION OF AIRPORT EXECUTIVES
BEFORE THE
COMMITTEE ON SCIENCE AND TECHNOLOGY
SUBCOMMITTEE ON TRANSPORTATION, AVIATION AND MATERIALS
ON
EMERGING ULTRALIGHT AIRCRAFT TECHNOLOGY AND PUBLIC SAFETY
MAY 21, 1984

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE:

I AM CHARLES BARCLAY, EXECUTIVE VICE PRESIDENT OF THE AMERICAN ASSOCIATION OF AIRPORT EXECUTIVES AND I AM ACCOMPANIED BY PAUL ROLLINGER AAAE'S VICE PRESIDENT-PUBLIC AFFAIRS. AAAE IS A PROFESSIONAL MEMBERSHIP ASSOCIATION REPRESENTINIG OVER 900 AIRPORT MANAGERS WHO ADMINSTER OVER 600 AIRPORTS NATIONWIDE. AAAE REPRESENTS MANAGERS FROM THE LARGEST TO SOME OF THE SMALLEST AIRPORTS IN THE UNITED STATES.

ON BEHALF OF OUR MEMBERSHIP WE APPRECIATE THE OPPORTUNITY TO PRESENT OUR VIEW TO THE COMMITTEE ON THE SUBJECT "EMERGING ULTRALIGHT AIRCRAFT TECHNOLOGY AND PUBLIC SAFETY." TO SAY THAT THE ULTRALIGHT ISSUE HAS CAUSED A GREAT DEAL OF CONCERN AND CONFUSION AMONG AIRPORT MANAGERS, WOULD SIMPLY BE AN UNDERSTATEMENT OF THE FACTS. IN REFLECTING ON THE TITLE OF THIS HEARING, IT MAKES US FEEL BETTER THAT

EVEN CONGRESS HAS NOT FULLY BEEN ABLE TO COMPREHEND THE FAA'S DECISION TO CALL ULTRALIGHTS, VEHICLES AND NOT AIRCRAFT. HOWEVER, I WOULDN'T WANT TO BE THE ONE TO TELL THE WRIGHT BROTHERS THEY WERE FLYING A VEHICLE AND NOT AN AIRCRAFT.

AS A SHORT BIT OF HISTORY, 14 AVIATION ASSOCIATIONS MET IN JULY OF 1981 TO TRY AND ESTABLISH SAFE OPERATING PROCEDURES AND SOME GUIDANCE TO THE FAA IN THE ESTABLISHMENT OF AN ULTRALIGHT REGULATION. THE MOOD AT THIS MEETING AND DURING THE INITIAL GROWTH OF ULTRALIGHTS WAS ONE OF CAUTION AND OPPORTUNITY. ULTRALIGHT PILOTS WERE HAILED AS THE NEXT GENERATION OF PILOTS AND A NEW SOURCE OF INCOME FOR A VERY DEPRESSED AIRCRAFT MARKET. SO AS NOT TO HAMPER THE GROWTH OF ULTRALIGHT FLYING A VERY GENERAL REGULATION THAT DIDN'T REQUIRE A PILOTS LICENSE OR A CERTIFICATED AIRCRAFT WAS ADOPTED. LOOKING BACK, THE DECISION TO "GO EASY" ON THE NEW ULTRALIGHT INDUSTRY MAY NOW BE THE REASON ULTRALIGHT FLYING ISN'T AS BIG AS MOST PEOPLE HAD PREDICTED IT WOULD BE. DID WE DO A DISSERVICE TO THIS "NEXT GENERATION" OF PILOTS BY NOT REQUIRING THAT THEIR VEHICLES BE CERTIFICATED AS AIRCRAFT, OR PILOTS TRAINED AND LICENSED IN A MANNER SIMILAR TO PILOTS OF ALL OTHER AERONAUTICAL ACTIVITIES? IF WE DID NOT DO A DISSERVICE TO THEM WHY ARE OVER 50% OF ULTRALIGHT ACCIDENTS ATTRIBUTED TO PILOT INEXPERIENCE, AND HOW CAN WE EXPECT THEM TO OPERATE IN THE SAME AIRSPACE AND AT THE SAME AIRPORTS WITHOUT COMPROMISING THE SAFETY OF ALL USERS OF THE AVIATION SYSTEM? PERHAPS WHEN THE ULTRALIGHT WAS BEING HERALDED AS AN EVERYMAN'S AIRPLANE, OR THE MODEL T OF AVIATION, WE SHOULD HAVE TAKEN THE APPROACH THAT SAFETY WILL MAKE THE PROGRAM SELL.

INSTEAD, WOULD-BE ULTRALIGHT ENTHUSIASTS WERE HIT BY THE MEDIA SHOWING ULTRALIGHT ACCIDENTS AND THEIR VICTIMS, WHILE ALSO REPORTING NEAR MISSES WITH COMMERCIAL AIRCRAFT. BY LETTING ULTRALIGHT PILOTS

FLY WITH MINIMAL TRAINING INTO AREAS THAT THE FAA HAD PREVIOUSLY ALLOWED ONLY LICENSED PILOTS AND CERTIFICATED AIRCRAFT, DID THE INDUSTRY AND THE FAA CREATE A SITUATION THAT WILL PRECLUDE THE FUTURE GROWTH OF ULTRALIGHTS? WE MAY POSSIBLY NEVER KNOW THE ANSWER TO THIS QUESTION, BUT THAT CERTAINLY DOESN'T PRECLUDE THE INDUSTRY, THE FAA, AND THIS COMMITTEE FROM CORRECTING THE PRESENT INADEQUACIES IN THE ULTRALIGHT SYSTEM.

FROM THE AIRPORT MANAGER'S PRESPECTIVE THERE ARE SEVERAL MAJOR QUESTIONS THAT NEED TO BE ANSWERED REGARDING ULTRALIGHTS AND THEIR OPERATIONS. THE FIRST MAY WELL BE, "WHAT EXACTLY IS AN ULTRALIGHT?" WE UNDERSTAND THE PHYSICAL CHARACTERISTICS OF IT AND WHAT WENT INTO THE DECISIONS CONCERNING WEIGHT, SPEED, AND FUEL CAPACITY, BUT THE LEGAL DEFINITION OF AN ULTRALIGHT LEAVES US SLIGHTLY CONFUSED. THE FAA HAS RULED THAT THE ULTRALIGHT IS A VEHICLE AND NOT AN AIRCRAFT. BY DOING THIS THE FAA HAS CREATED A NEW AERONAUTICAL ACTIVITY. IT IS ONE THAT NEITHER REQUIRES A PILOTS LICENSE OR A CERTIFICATED AIRCRAFT. YET, BECAUSE THE ULTRALIGHT HAS BEEN "CLASSIFIED" AS AN AERONAUTICAL ACTIVITY IT IS GRANTED ALMOST ALL OF THE RIGHTS AND PRIVILEGES WITHOUT ANY OF THE OBLIGATIONS REQUIRED OF ALL OTHER AERONAUTICAL ACITVITIES. WE PLACED QUOTATION MARKS AROUND CLASSIFIED BECAUSE AS YOU CAN SEE IN OUR ATTACHED DOCUMENTS THE POLICY GUIDANCE ON THE USE OF FEDERALLY OBLIGATED AIRPORTS BY ULTRALIGHT VEHICLES ISSUED BY THE FAA DIRECTOR OF AIRPORT STANDARDS, STATES THAT "ULTRALIGHTS ARE CONSIDERED AN AERONAUTICAL ACTIVITY". (ATTACHMENT 1) BUT IN REVIEWING THE FAA'S AIRPORTS COMPLIANCE REQUIREMENTS, WHICH ALL FEDERALLY OBLIGATED AIRPORTS MUST ABIDE BY, AN AERONAUTICAL ACTIVITY "IS ANY ACTIVITY WHICH INVOLVES, MAKES POSSIBLE, OR IS REQUIRED FOR THE OPERATION OF AIRCRAFT..."(ATTACHEMENT 2) IF THE ULTRALIGHT IS A VEHICLE AND NOT AN AIRCRAFT THEN HOW CAN IT BE AN

AERONAUTICAL ACITVITY? TO FURTHER CONFUSE THE ISSUE THE FAA ADVISORY CIRCULAR, 103-6, ULTRALIGHT VEHICLE OPERATION, FREELY INTERCHANGES THE TERM ULTRALIGHT AND AIRCRAFT WHEN DISCUSSING SAFE OPERAITONS ON THE AIRPORT.(ATTACHMENT 3)

THIS IS A MAJOR ISSUE FOR AIRPORTS BECAUSE ALL AERONAUTICAL ACTIVITIES ARE NOT NECESSARILY COMPATIBLE WITH ALL USERS OF AN AIRPORT. WHEN A SITUATION OF THIS NATURE ARISES, IT IS UP TO THE AIRPORT MANAGER TO DECIDE--IN THE ABSENCE OF AN FAA DECISION--IN THE INTEREST OF SAFETY WHAT, IF ANY, OPERATIONS SHOULD BE RESTRICTED. AND DEPENDING ON THE SIZE, TYPE, AND SPEED OF THE MAJORITY OF THE USERS OF AN AIRPORT A MANAGER MAY EVEN HAVE TO PROHIBIT CERTAIN AERONAUTICAL ACTIVITIES. SOME EXAMPLES OF THIS WOULD BE RESTRICTIONS OR PROHIBITION OF PARACHUTING, BALLOONING, OR TOWING GLIDERS. UNFORTUNATELY, WHEN SOME SMALL AIRPORTS, IN A FEW CASES WITH CORPORATE JET TRAFFFIC AND EVEN COMMERCIAL TRAFFIC, PROHIBITED ULTRALIGHTS, THEY WERE TOLD BY FAA THAT THEY HAD TO ALLOW ULTRALIGHTS ON THE AIRPORT BECAUSE THE AIRPORT HAD ACCEPTED FEDERAL FUNDS. IT SEEMS IRONIC TO US THAT THE ACCEPTANCE OF FEDRAL FUNDS MIGHT REQUIRE AN AIRPORT TO BE LESS SAFE. IF THE ULTRALIGHT HAD A COMPATIBLE LANDING SPEED WITH THE OTHER USERS OF AN AIRPORT, OR IF FAA HAD PROMLUGATED ADEQUATE OPERATIONAL STANDARD PROCEDURES AS THEY DO FOR OTHER AERONAUTICAL ACTIVITIES, AIRPORT MANAGEMENT WOULD BE MORE THAN HAPPY TO ACCOMMODATE THEM. BUT SINCE THEY DON'T, AND THEY DON'T HAVE EXPERIENCED OPERATORS, AND THEY GENERALLY DON'T HAVE RADIOS, AIRPORT MANAGERS AT SOME AIRPORTS HAVE JUDICIOUSLY MADE A DECISION BASED ON SAFETY TO REQUIRE CERTIFICATED AIRCRAFT AND LICENSED PILOTS.

AS AN ANALOGY, SOME OF THESE VERY SAME COMPATIBILITY COMPARISONS ARE MADE BY STATE HIGHWAY DEPARTMENTS WHEN THEY POST SIGNS PROHIBITING MOPEDS AND BICYCLES ON THE INTERSTATE HIGHWAY

SYSTEM. HOWEVER, MR. CHAIRMAN CAN YOU IMAGINE WHAT WOULD HAPPEN IF THE FEDERAL HIGHWAY ADMINISTRATION SAID THAT INTERSTATE I35 BETWEEN MCPHERSON AND NEWTON, KANSAS, ISN'T REALLY THAT BUSY, SO MOPEDS AND BICYCLES MUST BE ALLOWED TO USE THIS SECTION OF INTERSTATE. WELL, THAT IS EXACTLY WHAT THE FAA HAS DONE AT SEVERAL AIRPORTS THAT WANTED TO PROHIBIT ULTRALIGHTS. THIS INCLUDES SOME AIRPORTS WITH TOWERS AND EVEN SOME WITH COMMERCIAL OPERATIONS.

SOME ULTRALIGHT PILOTS AND ORGANIZATIONS MAY ARGUE THAT ULTRALIGHTS ARE AS COMPATIBLE AS CESSNA 152'S OR OTHER SMALL TRAINING AIRCRAFT, BUT WE ARE INCLINED TO DISAGREE. IF THEY ARE COMPATIBLE, WHY WOULD ON OF OUR MEMBERS BE TOLD BY THE ORGANIZERS OF AN ULTRALIGHT FLY-IN THAT THEY WOULD PREFER HE NOT FLY HIS PIPER TRI-PACER TO THE FLY-IN BECAUSE THEY DIDN'T THINK IT WAS COMPATIBLE.

THIS IS ONLY ONE SIDE OF THE COIN, THE OTHER SIDE DEALS WITH THE PROBLEMS AN AIRPORT FACES WHEN THEY HAVE MADE THE DECISION TO ALLOW ULTRALIGHT OPERATIONS. BECAUSE ULTRALIGHTS TRY TO AVOID OTHER AIRCRAFT IN AND AROUND AIRPORTS THEY GENERALLY DO NOT FLY THE STANDARD AIRPORT TRAFFIC PATTERN. IN FACT WE HAVE ON RECORD SEVERAL CASES WHERE ULTRAIGHT PILOTS HAVE SIMPLY IGNORED THE PATTERN, AND FOR THAT MATTER ALL OF THE AIRCRAFT IN IT, AND LANDED ON THE ACTIVE RUNWAY. AT THE PRESENT TIME THE FAA EXPECTS EACH AIRPORT TO ESTABLISH OPERATING PROCEDURES FOR ULTRALIGHTS USING THE AIRPORT. THIS HAS PUT THE AIRPORT IN THE POSITION OF BEING A MINI FAA FLIGHT STANDARDS AND AIR TRAFFIC OFFICE, WHICH IS SOMETHING AIRPORTS SHOULD NOT, LEGALLY CANNOT, AND ARE NOT QUALIFIED TO DO. ACCORDING TO THE FEDERAL AVIATION ACT OF 1958, SECTION 307, ONLY THE ADMINISTRATOR HAS THE AUTHORITY TO ESTABLISH TRAFFIC PATTERNS AND OPERATING PROCEDURES FOR AERNAUTICAL ACTIVITIES.

BY MAKING AIRPORTS RESPONSIBLE FOR ULTRALIGHTS, JUST AS

AIRPORTS ARE PRESENTLY RESPONSIBLE FOR ALL OF THE FUELING THAT TAKES PLACE ON THE AIRPORT, THE AIRPORT IS ONCE AGAIN PLACED IN THE POSITION OF REGULATING AN ACTIVITY THAT IT HAS NO EXPERTISE OR DESIRE TO REGULATE, AND WHICH IS TRULY THE RESPONSIBILITY OF FAA TO REGULATE.

IT IS OUR RECOMMENDATION THAT AT LEAST REGULATIONS GOVERNING THE OPERATION OF ULTRALIGHT PILOTS BE EXPANDED FROM ITS PRESENT ONE PARAGRAPH IN FAR PART 103 TO INCLUDE MANY OF THE BASIC REGULATIONS CONTAINED IN FAR PART 91, WHICH GOVERNS AIR TRAFFIC AND GENERAL OPERATING RULES. SPECIFICALLY, PARTS 91.85, OPERATING ON OR IN THE VICINITY OF AN AIRPORT; 91.87, OPERATION AT AIRPORTS WITH OPERATING CONTROL TOWERS; 91.87, OPERATION AT AIRPORTS WITHOUT CONTROL TOWERS; AND 91.90, TERMINAL CONTROL AREAS, SHOULD BE THE BASIC REGULATIONS ULTRALIGHT PILOTS MUST KNOW BEFORE BEING GIVEN THE RIGHT TO OPERATE INTO AIRPORTS. THE FAA SHOULD ALSO ESTABLISH AIR TRAFFIC PROCEDURES TO BE FOLLOWED AT AIRPORTS THAT HAVE ULTRALIGHT OPERATIONS. FINALLY, AND MOST IMPORTANT IMMEDIATELY, IF AN AIRPORT MAKES THE DECISION TO RESTRICT OR PROHIBIT ULTRALIGHTS THE FAA SHOULD NOT UNDER ANY CIRCUMSTANCES REVERSE THE DECISION IF IT CONTINUES TO MAINTAIN A HANDS-OFF APPROACH TO REGULATING THE SAFETY OF ULTRALIGHTS AND THEIR IMPACT ON OTHER USERS OF THE AVIATION SYSTEM.

MR. CHAIRMAN I WOULD BE HAPPY TO ANSWER ANY QUESTIONS YOU OR THE COMMITTEE MAY HAVE AND I APOLOGIZE IF OUR TESTIMONY IS A LITTLE CONFUSING, BUT AS I SAID BEFORE, THIS ISSUE IS CONFUSING AIRPORT EXECUTIVES.

NOTE: ATTACHMENTS 4 AND 5 ARE TWO LETTERS INDICATIVE OF THE MANY AAAE HAS RECEIVED ON THIS SUBJECT.

20 APR 1983
INFORMATION: Policy Guidance on the Use of Federally Obligated Airports by Ultralight Vehicles

Director, Office of Airport Standards, AAS-1

ATTN: All Regions and AAC-960
Manager, Airports Division

In view of the above, we offer the following as guidance until such time as the agency's involvement in the operation of ultralights becomes more defined.

Ultralight vehicle operations are considered an aeronautical activity and, as such, must be accommodated on airports which have been developed with Federal assistance. This doesn't necessarily mean on existing conventional runways if ultralight operations can be safely accomplished at a designated ultralight operations area on the airport. An airport operator may make the determination that proposed ultralight operations are unsafe and opt to not allow them to conduct flight operations on the airport. When this occurs and the FAA Airports office is contacted concerning the determination of whether ultralights can safely operate at the airport, the Flight Standards District Office should be called on to verify the determination made by the airport operator. AFO has advised all Flight Standards Offices of this possibility and they are prepared to make this determination.

Airport operators should submit an FAA Form 7480-1, Notice of Construction, Alteration, Activation, and Deactivation of Airport, prior to the establishment of ultralight operational areas. It is strongly recommended that ultralight operations areas be established at least 700 feet from all existing conventional runways.

The use of the Kitsap County Airport regulations and the AOPA/ASF guidelines cannot be endorsed by this office based on the AGC opinion which points out many conflicts with the provisions of the Federal Aviation Act of 1958. We suggest that if an airport operator elects to use the Kitsap County rules as a guide that they be advised of the possible legal ramifications which they might encounter.

Headquarters has recently reviewed an additional set of sample regulations submitted by AOPA/ASF to the FAA for review. Upon adoption of these sample regulations by AOPA/ASF, we will send copies to you for your information and possible use.

Another obligation of the airport operator is to ensure that users of the airport contribute a fair share towards the operation of the airport. That is, if the operator of an obligated airport should impose a fee for the use of airport facilities by ultralight vehicle operators, this would be consistent with agency policy provided the charges and fees are not discriminatory.

Our involvement in the establishment of privately owned ultralight flightparks will probably be limited to processing airspace actions under the provisions of FAR Part 157, and the collection of data through the FAA Form 7010-2.

36. DEFINITIONS.

a. Exclusive Right. A power, privilege, or other right excluding or debarring another or others from enjoying or exercising a like power, privilege, or right. An exclusive right may be conferred either by express agreement, by the imposition of unreasonable standards or requirements, or by implication and construction. A right or privilege conferred on two or more parties but excluding others from enjoying or exercising similar rights would be an exclusive right. The essence of any exclusive right is the enjoyment of a privilege unreasonably denied to others.

b. Federal Funds. Any airport which consists in whole or in part of property, improvements, or other assets conveyed by the United States Government without monetary consideration for airport purposes, or which was acquired, developed or improved with Federal assistance must be considered as an airport upon which Federal funds have been expended.

c. Landing Area. Any locality, either of land or water, including airports and intermediate landing fields, which is used, or intended to be used, for the landing and takeoff of aircraft, whether or not facilities are provided for the shelter, servicing, or repair of aircraft, or for receiving or discharging passengers or cargo (Definition in Federal Aviation Act, Section 101).

d. Aeronautical Activity. Any activity which involves, makes possible, or is required for the operation of aircraft, or which contributes to or is required for the safety of such operations. For example:

(1) The following are aeronautical activities:

(a) Air taxi and charter operations

(b) Scheduled or nonscheduled air carrier services

(c) Pilot training

(d) Aircraft rental and sightseeing

(e) Aerial photography

(f) Crop dusting

(g) Aerial advertising and surveying

CHAPTER 1. AIRPORTS AND ULTRALIGHT FLIGHTPARKS

10. WHERE TO TAKEOFF AND LAND. One of the questions most frequently asked by the ultralight pilot is, "Where can I safely and legally takeoff and land my ultralight?" The following information is designed to assist the ultralight pilot in understanding the different types of operations, both on and off airport, and the recommended procedures for obtaining permission to operate ultralight vehicles.

a. Existing airports. Currently, there are approximately 16,000 public use and private airports and seaplane bases in the United States. The vast majority of these facilities may be suitable and compatible for safe ultralight operations. Information on their location may be obtained from various sources, such as FAA publications (i.e., Airport/Facility Directory, aeronautical charts, etc.) which may be purchased at most local airports. Also, user organizations have comprehensive airport listings which usually include a description of the facility.

Items to Consider

(1) Some of these airports have their air traffic directly controlled by an air traffic control tower. Use of these airports requires prior permission of airport management and the local air traffic control authority (see FAR Part 103.17). Since the volume of aircraft operating at these airports is usually significantly higher, ultralight operators may find operations at these airports to be less desirable than operations at uncontrolled airports.

(2) There are many airports where air traffic is not controlled by an air traffic control tower and the traffic activity level is usually low. These airports are referred to as "uncontrolled airports." Use of these airports by ultralight vehicles may require prior permission of the airport operator. When seeking access to these airports, ultralight operators should remember that even though the airport may be tax supported, airport management has the responsibility for determining the compatibility of operating the various classes of aircraft on the airport. If an ultralight can be safely operated at the airport, then permission to operate the ultralight vehicle may be granted. Safety of aircraft operations on the airport is always the prime consideration.

b. Abandoned Airports. Since 1970, approximately 3,000 airports have been abandoned because of a lack of activity, financial problems, or other related reasons. The majority of these airports are located in rural areas, privately owned, and possibly well-suited for ultralight training and other activities. Many state aeronautical organizations have knowledge of recently abandoned facilities and should be able to assist you in finding these sites. It may be possible to obtain permission of the property owner to reactivate certain of these facilities for ultralight operations.

c. Open Space Operating Areas. One of the prime advantages of ultralight operation is the vehicle's ability to operate in small areas. FAR Part 103 does not prohibit ultralight takeoff and landing from open areas, providing the operation does not overfly congested areas. Good judgement still dictates that an ultralight pilot obtain prior permission from the landowner and be familiar

EXECUTIVE

MAY 16 1984

American Assoc. of Airport Executives

TO:

Indianapolis Airport Authority • Indianapolis International Airport

EXECUTIVE DIRECTOR · DANIEL C. ORCUTT
INDIANAPOLIS, INDIANA 46251 · (317) 248-9594
CABLE: WORLDPORT · INDIANAPOLIS

May 14, 1984

Mr. Charles Barclay
American Assn. of Airport Execs.
2301 M Street, N. W.
Washington, D. C. 20037

Dear Chip:

The Ultra Light situation is beginning to get out of control. Before it does, we would offer the following comments:

1. FAA should develop minimum standards for construction of ultralights, i.e., materials, construction procedures, quality control, etc. FAA need not certify a design, but there should be minimum standards that all manufacturers must comply with.

2. Ultralight pilots that intend to use public airports should hold some type of FAA license, although it need not be a license issued after flight test, but should be a license issued after passing a written or oral test on Part 91 regulations and any FAA ultralight regulations which may be published. (Test to be given by FAA designated examiners.)

3. Ultralight pilots should be required to have about 5 hours of dual instruction in either an ultralight or conventional aircraft as a requirement to take the oral or written examination for an ultralight pilot license. Purpose is to teach an ultralight pilot basic theory of flight and use of flight controls.

4. We agree with AAAE, FAA should be leading the parade on ultralights and not put burden on airport operators or the states to regulate ultralight operations.

5. There is a substantial legal liability in respect to ultralights that would be a concern to airport operators. In lieu of federal standards, airport operators must establish procedures for ultralight operations and rules for ultralight flights at airports. Establishing procedures and rules means the airport operator must enforce and police them. If you don't and there is an accident caused by violation of an airport procedure or rule which is not enforced, we may be sued by the injured third party.

6. Airport operators should have discretion to ban ultralight operations if safety is compromised, notwithstanding our federal grants. I wonder if ultralight operators even pay into the trust fund since ultralights don't use any gas.

7. Ultralight operators should be required to wear "T" shirts imprinted with the words, "God is my Co-pilot."

Sincerely,

Daniel C. Orcutt
Executive Director

City of Flagstaff

May 10, 1984

American Association of Airport Executives
2301 M Street, N.W.
Washington, D. C. 20037

Gentlemen:

This letter will provide information concerning Pulliam Airport and Ultralight vehicle/aircraft activities. This information may be used as necessary for testimony before Congress.

During mid 1982 this Airport Manager was approached by several individuals who requested permission to set up, launch, fly, recover, and take down ultralight vehicles at Pulliam Airport, Flagstaff. Permission was not granted, based primarily on safety considerations. Ultralight operations would have compromised safety for the following reasons:

1. Ultralights fly at a very slow speed compared to most aircraft.

2. Flagstaff Airport has only one runway, thereby requiring unusual distances for interval and seperation of other aircraft. Longer intervals cause undo delays in normal traffic.

3. Facilities for ultralight set up and take down are not normally available.

4. Operators of ultralight vehicles not required to be licensed or medically qualified.

5. Ultralight vehicles not required to have airworthiness certificates, therefore the possibility of unsafe vehicles.

The Flagstaff Airport Commission, as well as City Staff, concurred in this position, and the denial of use of Pulliam Airport for ultralight operations.

Following the effective date of FAR Part 103, an additional problem developed. Two of the gentlemen making the original request, owned and operated ultralight vehicles which fell outside of Part 103, i.e., too heavy, too fast, etc. These gentlemen were told that we could not restrict them from flying at Pulliam Airport, providing they registered their aircraft as homebuilt/ experimental and met all other provisions, such as having a pilot's license

and medical certificate. Following considerable effort on their part, all provisions as outlined were met. Subject ultralight aircraft were then able to fly at Pulliam Airport as experimental.

Both of the above mentioned aircraft(ultralight/experimental) have been flown at this airport six to eight times over the past one and one half years. On nearly each occasion of flight, some problem was created:

1. On January 8, 1983, a Cessna 310 was in his take off roll on RW 03. The take off had to be aborted 1/4 way down the runway because one of the above mentioned ultralight/experimentals had entered the runway(no radio) for an intersection take off.

2. On one other occasion(date not recorded)an ultralight/experimental entered our traffic pattern at 500' AGL(est), flew across the runway at mid-field, entered downwind RW 03 and in doing so, cut five(yes, 5) aircraft out of the pattern. The five aircraft were a flight of 5 making an approach for a fly-by for an Airport Open House.

3. On July 9, 1983 one of the licensed ultralights landed on RW 21, occupied the runway for too long, causing two aircraft to "go around". One of the aircraft going around was a Skywest Airlines Metroliner.

In my opinion, the above problems were caused by ultralight type aircraft operating in an area with only one runway, incompatible airspeeds, less than average pilot abilities, and no radios.

Various Staff members of the City have worked very closely with the ultralight owners and enthusiast and particularly with the Northern Arizona Ultralite Pilots Association in an effort to find or develop a safe place to fly the Ultralight Vehicle. To date, and because of the mountainous and forested terrain, a specific site has not been identified. The City of Flagstaff will continue to work closely with the Ultralight community and the Northen Arizona Ultralite Pilots Association. Also until such time that an additional runway or seperate area becomes available here at Pulliam Airport, ultralight vehicle operations per FAR Part 103 will not be authorized.

I'm not sure that sufficient time has gone by since Part 103 became effective, to see if self regulation will work. Certainly ultralights are here to stay. We should see a steady increase in their popularity and numbers in the coming years. I would compare Part 103 ultralight operations to that of "dirt bike" motorcycles. You don't need a license, and there is no age limitation for riding a "dirt bike". However, "dirt bike" type motorcycles aren't permitted on the Interstate or Main Street. Therefore, ultralight vehicles should not be permitted to utilize the same runways/taxiways as the licensed aircraft and certificated pilots. Additionally, the FAA should restrict(totally) ultralights from certain crowded airspace.

I believe that primarily for safety reasons, FAA must tighten the regulations as they pertain to operating ultralight vehicles to/from an airport such as Pulliam Airport, Flagstaff.

If I may be of further assistance concerning the "Ultralight" matter, please do not hesitate to contact me.

Sincerely,

G. Larry Larkin

G. Larry Larkin
Airport Manager
Pulliam Airport
City of Flagstaff
(602)774-1422

Mr. GLICKMAN. Thank you.

First of all, I want to clarify what you just said. The FAA takes the position that if an airport restricts or bans the facility from using ultralights, they take the position that they can, in fact, force the airport to accept ultralights.

And Mr. Baker is shaking his head "no." Let me get your response first.

Mr. BARCLAY. I can give the committee some examples. Modesto, CA, for instance, which does get commercial traffic, both the airport operator and the control tower chief recommended that they not be allowed, and FAA, after an examination, decided that they could be allowed.

So the airport has been placed in a position of having to allow them. The issue comes up if you accept Federal funds, you cannot restrict aeronautical activities at your airport.

So it is that you cannot restrict aircraft or aeronautical activities. So by denying them as aeronautical activities, it has allowed them to operate at airports, and perhaps this is a communication problem between the central office at FAA and Washington, and the regions.

But we can assure you both Morristown, NJ, that we have heard from, Flagstaff, AZ, that we have attached a letter from them in our testimony, as well as Modesto, CA, have all had to accept ultralights when they did not want to.

Mr. GLICKMAN. Mr. Baker, did you want to comment on that?

Mr. BAKER. Well, Mr. Chairman, like so many questions on this whole issue, I think that he has overstated the case somewhat dramatically. We have participated, I am comfortable, in far more cases of this question than anyone in the country.

And we have 200 airports where currently there are ultralights flying under an agreement, and it is spelled out in the pamphlet with which I saw you looking at a while back, and it is a negotiated settlement.

If indeed it is not feasible to do it on the confines of the airport, then they are not required to do it. It is not as gross as it sounds. They don't force them to share the same runway with 747's obviously, because most of the ultralight users are not suicidal.

If there is a tower on the airport, there is traditionally required two-way radio, which is available in the hand-held system, or a letter of agreement which very carefully defines where you operate from, what pattern you fly and so forth. And it is spelled out with specificity.

The FAA is not forcing anyone to accept unsafe operations on any airport. Airport operators take exactly the same position, and I can recall one of your colleague's statements on that subject, Mr. Snyder, when the operator from San Jose was complaining about having to accept general aviation at their airport, and he said "it sounds to me like you have a heck of a job if it wasn't for airplanes."

And that posture——

Mr. BARCLAY. Airplanes are OK.

Mr. BAKER. Air vehicles. That problem pops up, I think, in this testimony, too.

Mr. GLICKMAN. OK. I would like to just briefly, in a one or two sentence situation, try to get a summary of what you think the FAA or Federal role ought to be in the licensing or certification process again, so that we have that clearly stated for the record.

Mr. Baker.

Mr. BAKER. If I understand the question, you are referring specifically to airports or the overview.

Mr. GLICKMAN. Overview.

Mr. BAKER. I think the current regulation—and it is not without regulation—is adequate at this point. I think the jury is still out. If, indeed, the voluntary participation does not work, then we will be the first people to come back both here and to the FAA and say we should have additional Federal regulation.

Mr. GLICKMAN. And that would, of course, be modified by the number of ultralights—you have made the point that you could see this area dramatically expanding because of costs and other kinds of factors.

Mr. BAKER. I think we have seen the dramatic expansion of the thing. I think it has now leveled off and is going to run along at a somewhat more less dramatic rate. But nevertheless, it is an area that carries with it a growth potential. There is no question.

Mr. GLICKMAN. OK. Mr. Muth.

Mr. MUTH. I support Mr. Baker's views. We think that the rule is adequate. Certainly additional time is required to see how effective these programs are going to be. And we are looking for that additional time.

Mr. GLICKMAN. Mr. Poberezny.

Mr. POBEREZNY. We feel that many of the problems that ultralights have faced have come from several points, that is not mandatory registration. Many people feel a number on a machine is a license; if you don't have a number on the machine, you are not part of the aviation group.

The other item is the minimum standard of recognized operator knowledge, tested by a simple written example, to ensure that the operator operating off of an airport or air space has the knowledge.

The other aspect would be, say, if the ultralight was a Piper Cub, how would it fit in on your airport. It only approaches the airport at 20 miles an hour, 30 miles an hour faster. Would that be acceptable?

We have a caste and class system in aviation. The fellow that really has made it is one that flies a C–5. Everything else is a little in front of him, "get out of my way."

Mr. GLICKMAN. What about this issue that Mr. Poberezny raises, about a minimum standard of recognized operator knowledge? What I am trying to figure out is if there is not some kind of middle ground to ensure, as you point out, John, that 60 percent of those flying are certified anyway, if the confidence in this whole system wouldn't be improved by having some sort of minimum standard.

For example, I am reading from your Ultralight "Safety Tips." And one of the tips is, "Always wear a parachute when flying at an altitude that will permit its deployment."

That may be a useful type of circumstance. But if I were——

Mr. BAKER. It is a hell of a lot more important in the event of a failure, self-induced or otherwise, than knowing the regulations would be at this particular point.

Mr. GLICKMAN. It all depends on your perspective. What I am trying to figure out is whether some sort of minimum standard of operator knowledge would not be a useful thing.

Mr. BAKER. We have the strongest incentive in that arena. Contrary to Chip's problem, and we do sympathize, there are problems obviously, at some airports they have a lack of facilities in terms of runway space and so forth. Our members—and we represent a high percentage of the active fliers in this country, are the people sharing both airports and airspace with the ultralight user.

That is one of the principal reasons we got involved in this activity, to ensure we are all singing from the same hymnbook. However, if you analyze the statistics, you are talking about apples and oranges in the sense that if you are interested in improving safety, that is operational, and that is not really related to knowing the rules of the road.

That is knowing how to drive the vehicle.

Mr. GLICKMAN. That is right. But his minimum standard of recognized operator knowledge——

Mr. BAKER. Has nothing to do with manipulation of controls or operating the machine. It has to do with a very simple test. In the program we run we give a written exam, essentially the same as the private.

We insist that the expert observe the operation of the machine by the applicant to determine that he is competent to run the machine.

Mr. GLICKMAN. That is what he says. He says the minimum standard of recognized operator knowledge tested by simple written example that will verify a knowledge level sufficient for safe operation.

Mr. BAKER. That does not have anything to do with safe operation.

Mr. GLICKMAN. You are not talking about——

Mr. BAKER. We believe in that as a part. We also believe there has to be a demonstrated physical competence in operating the machine. Because if you don't do that, you have real problems.

Mr. GLICKMAN. If you don't do that, this industry is not going to survive. Because there are going to be some accidents, the public is going to know there hasn't been some sort of an examination required.

Sport or no sport, you still need some sort of an examination to drive any sort of vehicle on the ground in this country.

Mr. BAKER. Not snowmobiles, off-road vehicles of one kind or another. Out where I was raised, immediately adjacent to the chairman's State, I was driving a truck when I was 10 years old and a tractor when I was 10 years old. As far as I know, we were not maiming or killing in wholesale numbers at that time.

Mr. GLICKMAN. At least we didn't know about it.

Mr. BAKER. True.

Mr. GLICKMAN. They were not reported.

Mr. POBEREZNY. I would like to add here. When we say safe operation, knowledge adds to safety. Operating in and out of airports

and along with other traffic. I can remember November 11, sitting in Mr. Helms' office, when he received a call from Eastern Airlines saying that last night, while making an approach to Miami, two ultralights were in their landing lights—"Do something about it." This was a few years ago.

Of course, in having the knowledge, the same type of written exam that AOPA has, wouldn't guarantee that there would be a safe operation. And this is part of part 103.

Mr. GLICKMAN. I guess my concern is, how do we reach the thousands that do not step up to your program?

Mr. BAKER. I think we are on our way to reaching those thousands at this point for a number of reasons. One, it has finally gotten across to the commercial interests in the ultralight activity they better get behind a program or they are going to see the nose of the camel under the tent at least.

And that carries with it ominous connotations, I think, from most of our perspectives. So, we believe that if, indeed, through this flying season, which is essentially this summer, since it is seasonal, we will see whether the industry, the people participating, have the maturity and the self-discipline to make the effort.

If, indeed, they don't, we will wash our hands of it and say it should be regulated, because that is not a negotiable issue beyond that point.

We have done what we believe should be done to ensure there is a climate which enables the industry to do that. If the industry doesn't opt to do it, it is no longer our burden, and then it be becomes the Federal Government's problem, as far as we are concerned.

Mr. GLICKMAN. I think that is a fair statement. I don't think you are going to see Congress doing anything, nor the FAA, in the next few months, anyway.

Mr. BARCLAY. I want to make clear that we would guess there is something in between here. The ability to self-regulate again is fine. That means you also have the ability not to comply with any regulations, and it is that issue that has our members concerned and we are hearing with increasing regularity, while it may not be representative of the majority of ultralight operators. Airports are clearly concerned about this. Airport operators don't want to make value judgments between type of aircraft. We want the FAA to do that, and set up standard procedures to determine the safety of various patterns, because that is what they are in the business to do. They are the experts, we are not.

When they step into an airport and say they will allow these on a separate runway, it puts the airport operator in the position of coming up with, or finding some agreement of safe operating method. That is not our business, we are not experts in that.

Mr. GLICKMAN. Let me ask this question. I am looking through the magazine "Ultralight." First of all, let's talk about the cost of these things. What are we talking about, $3,000 to $10,000?

Mr. BARCLAY. Probably now $4,000 to $7,500.

Mr. GLICKMAN. $5,000 to $7,000. We are talking about an engine that is designed for aircraft. Are you talking about an engine that might be like a motorcycle engine or small automobile engine?

Mr. BAKER. They started out as snowmobiles and gradually evolved into a specialize project.

Mr. MUTH. The primary suppliers of the engines have supplied the snowmobile industry.

Mr. GLICKMAN. OK. Is there anything particularly unique at all about the technology of the new ultralights that might demonstrate a step ahead in aeronautical technology? Are we talking about technology that is old, as old as——

Mr. BAKER. I think there have been some innovative things. We are going slow safe, which is a different technique than the one we have been looking at. I don't think anybody is looking for any long term aeronautical advances. The aeronautical advance is to enable people to be able to fly.

Mr. GLICKMAN. What are the primary components in terms of the structure of these airplanes?

Mr. MUTH. The airframe itself, the engine, the controls.

Mr. GLICKMAN. Is it aluminum, is it wood?

Mr. MUTH. Aluminum. From the fabrication on the wings——

Mr. GLICKMAN. And tell me a little bit about the kit process, and maybe you might tell us that if I want to buy an ultralight and I ordered one from one of these companies, they send me a big box and I just take it outside or take it to my airstrip and put it together?

Mr. MUTH. Essentially, that is the case. You have to assemble 51 percent of the aircraft and it can be done with tools that are available. The manufacturers do have a dealer network. Many of them require that the purchaser take it to a dealer and have the assembled product checked. That is essentially the process.

Mr. GLICKMAN. Do you have standards for your membership in this organization, like the companies have to have certain financial standards to be members?

Mr. MUTH. No sir, they do not.

Mr. GLICKMAN. Anybody who is involved in the manufacture of these can become a member of your organization?

Mr. MUTH. That is correct, as long as they can meet the dues requirements.

Mr. GLICKMAN. How do you ensure—do you have any self-regulatory requirements yourselves in your organization to make sure that these people are meeting certain standards?

Mr. MUTH. In terms of the certified product?

Mr. GLICKMAN. Yes.

Mr. MUTH. Yes sir. The process calls for the manufacturer to submit his documentation which is reviewed by a committee to determine that all of the tests that have been specified be carried out, have been properly recorded. That is the regulatory action that we are using now.

Mr. BAKER. Failure to comply also rules in the inability to participate.

Mr. MUTH. If you don't submit an adequate package or chose not to submit a package, then you don't get certified.

Mr. GLICKMAN. How many aircraft that are built do not go through the certification process?

Mr. MUTH. That gets to a basic point I think Mr. Poberezny raised, that we don't really know how many manufacturers are

building right now. We don't really know how many units are being built. So I can't give you a percentage. I would like to submit that those are the more responsible ones in this organization, in Puma, but I honestly can't tell you whether that represents 75 percent of the product that is being put on the market or represents 50 percent of the manufacturers. It certainly doesn't represent 50 percent of the manufacturers.

Mr. GLICKMAN. Well, tell me something about those products that do not meet the certification requirements. Are they fly by night companies that are making these things? Is there any kind of coordination on a continuing basis, warranties offered? That worries me a little bit.

Mr. MUTH. Well, I would be frankly hardpressed to generically categorize the companies. They are not major companies and I say that by comparing then with such organizations as Pioneer, which is a major force in the aviation aerospace industry. A lot of small companies, not essentially well financed. Beyond that, I think I would be speaking about——

Mr. GLICKMAN. You don't know what percentage of ultralights flying around here that are in the certified category and the percentage that are noncertified category?

Mr. MUTH. No, I do not.

Mr. Chairman, I don't want to mislead you now in terms of certified product on the marketplace. The process that I have described to you is one which we have just now put in place. We are now getting it started and in fact, there are no units out there bearing the Puma label this afternoon, but we anticipate that in very short order my members will be submitting those packages and we will be putting them before the public.

Mr. GLICKMAN. Mr. Barclay, what efforts have you made to get the FAA to strengthen the rules in this area and what have the results been?

Mr. BARCLAY. Mr. Chairman, I think when the 103 was originally developed, we were a party to the negotiations at that time. We suggeted that more part 91 be included so that people operating around the airport would know what the pattern was supposed to be and would have a general aeronautical package, and we, like the Administrator I think, have been reviewing this since it went on. We are only now hearing from our members: First, there are people operating out there around both controlled and noncontrolled airports who don't seem to have aeronautical knowledge; and second, that the FAA has come forward and actually required some airports to accept these when both the operator and the tower chief did not think they should be on the airport.

So I guess the point I make, this has been our first opportunity to express our views.

Mr. GLICKMAN. Mr. Baker, what about the problem that I have heard both you and Admiral Engen talk about, the part 103 regulations. How do you ensure that people know about those if there is no mandatory requirement?

Mr. BAKER. There are a number of vehicles obviously, and we have a heck of an interest in seeing that that is the case, particularly my board has an interest in making sure I see that is the case, since I spend so much money. The trade press we believe

reaches about 90 to 95 percent currently of the operators of ultralight aircraft machines. The dealers by and large are the people who operate the flight parks. There are very few and increasingly fewer people putting one together and flying them out of their pastures.

Mr. GLICKMAN. How many of these are bought on a mail order basis?

Mr. BAKER. That I can't start to answer, and I don't think anybody else could.

Mr. GLICKMAN. Are any being bought on a mail order basis?

Mr. MUTH. Yes.

Mr. BAKER. A small percentage. The States are indeed pushing hard on the educational programs so that they are making people aware and there is a significant amount of promotion going on for ultralights in one arena or another which carry it with some requirement.

If you chose to participate in an airshow, usually there is a requirement for liability insurance, among other things. So the message does come through. And most of the insurers—and one of carrots we put on the end of the stick—will not allow or will not insure you unless you have been through an approved or recognized program.

Mr. GLICKMAN. Mr. Baker, NTSB estimated there are 28,000 ultralight operators. One, do you agree with that estimate generally?

Mr. BAKER. Operators as opposed to mechines? That is flyers? Yes, I think that is a ball park.

Mr. GLICKMAN. How many registered themselves and/or their aircraft?

Mr. BAKER. Currently, based on the charts which we showed you from July to this point we have 2,600 pilots who have gone through the program and have met the requirements. We have 912 vehicles and that has gone from zero essentially in July. So in the period of 9 months—we have had problems getting liability insurance prior to that, that is one of the reasons we didn't push the program. It is much like the PUMA program, it has taken some time to get this thing up and running. Now we have a fully approved FAA program going and we are finally getting the industry support necessary to make it take off and go.

Mr. GLICKMAN. Last question.

Mr. Baker, the FAA has granted AOPA and your Experimental Aircraft Association authority to administer a program of instruction using dual place ultralights. Normally ultralights must be single place. How does this program work? How are the instructor pilots selected and do either one of your organizations bear any liability for any accidents?

Mr. BAKER. The first question last. Obviously we say we hope no. I am a lawyer, as I understand the chairman is. I have tried $100 million worth of aircraft cases. I am not about to answer that question in this forum for the simple reason that is a question for the courts to decide, obviously.

The two place program is based on let's not reinvent the wheel kind of mentality and that is, we made the judgment after the Wright Brothers said let's build another one having the guy that

did it the first time fly with the guy that is trying to maybe do it the second time, makes some sense.

We found a high percentage of the accidents in the ultralight activity, over 50 percent, are training and a high percentage, as the NTSB chairman indicated, are in the first 1 or 2 or 3 hours of flying. One of the ways to get over that hurdle obviously is to put the man in the two place but the two place doesn't meet 103 requirements, so we got an exemption which will allow us to authorize use of the two place.

We have not an instructor in the aircraft, but an examiner as a word of the art. The criteria for this is a statement from the manufacturer of the two place that the man is competent to operate the plane, FAA ground instructor license, a minimum 50 hours in ultralights, 5 hours in type, minimum of 10 students successfully trained and liability insurance.

The reason we do not go to the CFI or the broad-based flight instructor is probably reflected in the letter you read from the magazine with the Navy pilot with the broad-based background. Anyone that God gave the sense of a duck is not going to go out and strap a strange machine to your rear and go flying until you find out something about it.

Being a flight instructor doesn't necessarily mean you are a good ultralight instructor. A high percentage of the ultralight pilots over the years through evolution of this activity have been trained by other than flight instructors and we felt that it was shortsighted to foreclose that experience from instructing in the ultralight movement. That is why ours is convoluted and complex and we believe that it may be a dramatic inroad into the safety problem.

Mr. GLICKMAN. I want to thank you all for testifing today. I want to tell you that this subcommittee is going to be watching the progress of the FAA and NTSB very closely, and I would also encourage you if you have any followup information that you feel that is useful for us to have, please share it with us.

Thank you.

Mr. BAKER. Thank you, Mr. Chairman.

Mr. GLICKMAN. The last witness today is Mr. Sonny Najera, president of the National Association for State Aviation Officials.

The committee would entertain written testimony from anybody who would care to share it, so the record will be left open for 10 days for anybody who would want to submit testimony. I think this will probably be the first record that is kept up here on this issue, so it might be useful. If anyone wants to add something for the record, we will be glad to have that.

Your entire statement will appear in the record, so if you can summarize, we would appreciate it.

STATEMENT OF SONNY NAJERA, PRESIDENT, NATIONAL ASSOCIATION FOR STATE AVIATION OFFICIALS, ACCOMPANIED BY JOSEPH G. MASON, EXECUTIVE VICE PRESIDENT OF NASAO

Mr. NAJERA. Thank you. I will summarize our statement.

My name is Sonny Najera. I am the president of the National Association of State Aviation Officials, as well as representing the State of Arizona on many issues regarding transportation—avia-

tion specifically. With me is Joe Mason, executive vice president of NASAO.

We represent State agencies responsible for all facets of aviation except manufacturing and distribution. This is important in view of the overall subject of this hearing.

The States have never claimed the technical expertise that would enable us to provide knowledgeable insight into the area of air worthiness standards for ultralight aircraft. Our views today, therefore, are based on the pragmatic observations of our members in their experiences with ultralight operations in their States, plus additional analysis by our staff in preparation for this hearing.

We have, both as individual States and collectively as an association, been following the proliferation of ultralight aircraft closely. About 2 years ago, we formed a standing committee to monitor the ultralight situation. Our concern centers around the area of operations primarily.

We have been told that there are few ultralight accidents that could be attributed to the fact that an untrained operator was acting as pilot and that about half of the incidents investigated by FAA involved already licensed pilots. These claims don't appear to be supported by the one comprehensive report on ultralight accidents that we have been able to obtain and analyze, published by the NTSB covering about 98 accidents in 1983. Ninety-one of these include information on the pilot's qualifications. Of those 26 were rated pilots, 65, or 71 percent, were unrated operators. The NTSB listing, sorted by the two categories, is attached as an appendix in our filing.

Although the description of the accidents are kind of sketchy and they are subject to different types of interpretation, I think that it clearly shows that unrated pilots were responsible for a good portion of the accidents. There were nearly 74 percent more accidents as a percentage of the total for nonrated pilots due to improper operation.

Much of our analysis is admittedly conjecture. But we submit that cursory though it is, there is evidence that a trained pilot is less apt to let a machine fall out of the sky through ignorance than an untrained operator.

We have followed the efforts of the Aircraft Owners and Pilots Association to develop voluntary programs of ultralight registration and pilot competency training. Members of our Ultralight Committee have met with AOPA staff from their first moves on these programs; we have had AOPA representatives explain their proposals at our own meetings for the past 2 years.

We commend them on their initiative and diligence in pursuing the ultralight program. However, we have not been persuaded that those who volunteer to be safe pilots are the ones we have to worry about, nor are those who volunteer to identify and register their aircraft the people whose operations concern us.

Approximately 20 percent of our States are either doing some kind of regulating or registration of ultralights in one form or another and we don't necessarily as a whole agree that that is the arena of our responsibility nor do we want to create 50 little mini-FAA's around the country in an arena where we clearly feel that FAA has a mandate.

Our Ultralight Committee and membership as a whole, recently adopted a policy that did not support voluntary compliance and we feel it isn't sufficient enough to protect the general public from unsafe operation of ultralights. We feel that it would be a disservice to the ultralight community as it continues to grow and proliferate. There should be some kind of mandatory protection in the operations end of it.

In summary, our policy indicates that we would petition the FAA to make ultralight registration mandatory in accordance with FAA's approved private sector program, and as Mr. Baker indicated earlier there isn't any State that I am aware of that does not support similar programs like the one the Air Safety Foundation is having right now.

If FAA fails to require some kind of vehicle registration, the States should consider registration through some kind of FAA approved program.

Also, many States have in the policy recommended the States become involved in encouraging ultralight operators competency training through an FAA approved program or designated program. Here recently we resurveyed the States again and more and more States are going in the direction of saying that we need a mandatory proficiency or operator competency training program.

I would like to point out that the National Governors' Association at their annual conference, urged the FAA to accept the responsibility for registering, regulating and monitoring the rapidly growing ultralight segment of the industry.

In summary, Mr. Chairman, our position merely is calling ultralights by some other name does not make them anything other than aircraft. We believe that the FAA already has the responsibility to guarantee public safety from hazardous ultralight operations, just as they do with any other type of aircraft, and we pose no objection to some kind of designated program by FAA in terms of pilot proficiency and registration.

With that, Mr. Chairman, I will allow any questions. Thank you for allowing me to be here before your committee.

Mr. GLICKMAN. I think your testimony is excellent. It is a good summary, because I think your testimony just at first glance, does reflect the kind of balanced, middle-of-the-road approach to deal with proper regulation of this type of airplane, which is an airplane but it is a little bit different than other airplanes flying around, but if it collides with another airplane, it has the same effect as if it were.

Let me ask you this: Your testimony is basically that the FAA should step up to their responsibility to guarantee public safety by recognizing that ultralights are, in fact, airplanes. No. 1, do you think they can do this without destroying this sport?

Mr. NAJERA. Mr. Chairman, I don't think that we have destroyed the soaring sport or any other sports that we have over the years regulated, and I don't anticipate that we will do this in this particular case by merely mandating what is being done through a voluntary procedure.

Mr. GLICKMAN. Do you think that registration, full-blown certification, and airworthiness requirements should be imposed by the FAA in the ultralight field?

Mr. NAJERA. I am not quite sure what is meant by full-blown certification and how the context—I can't speak to that. I am sure that some of the emerging certification programs and the airworthiness things that have been presented to you before today, I am sure, can be met adequately. I am not so sure that I can say that I have a definition for a full-blown system. I think I heard a lot of testimony today that encourages me to think that there is a good middle ground in all three of the legs of the stool that we are talking about today.

Mr. GLICKMAN. I think you talk about this a little bit in your recommendation. I wonder if you would state for the record your position on FAA farming out the registration to a nongovernment organization and what do you think of its voluntary nature, and whether that is effective or not?

Mr. NAJERA. In terms of the farming out, we don't have a problem with them farming out to the private sector some approved program. Their farming out the contracting of control towers for many years, they farmed out FAA designated examiners. So there is no reason why that can't work.

Again, I commend AOPA for stepping forth and being one of the first associations doing something about it. We don't oppose that.

The second portion of the question, Mr. Chairman, if you would state that again?

Mr. GLICKMAN. I said, what do you think of the voluntary nature?

Mr. NAJERA. We pretty much take the position that it is mandatory, we would like to see it mandatory.

Mr. GLICKMAN. We thank you very much for your testimony today. You were to the point and short, and we appreciate it.

Mr. NAJERA. Thank you.

[The prepared statement of Mr. Najera follows:]

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TESTIMONY OF THE

NATIONAL ASSOCIATION OF STATE AVIATION OFFICIALS

Before the

SUBCOMMITTEE ON TRANSPORTATION, AVIATION AND MATERIALS

HOUSE COMMITTEE ON SCIENCE AND TECHNOLOGY

May 21, 1984

Presented by
Mr. Sonny Najera, Director,
Division of Aeronautics,
Arizona Department of Transportation
President,
National Association of State Aviation Officials

Founded in 1931, NASAO represents the departments responsible for aviation in the various States, Puerto Rico, and Guam. These departments are charged with the development and fostering of all facets of aviation and air service except manufacturing and distribution. State representatives to NASAO are officials with direct responsibilities for administering such aeronautics functions within their respective states.

Statement by Mr. Sonny Najera, President, NASAO:

Thank you, Mr. Chairman.

I am Sonny Najera, Director of the Division of Aeronautics, Arizona Department of Transportation, and President of the National Association of State Aviation Officials. With me is Joseph G. Mason, Executive Vice President of NASAO.

As you will note on the cover page of this statement, we represent state agencies responsible for all facets of aviation except manufacturing and distribution. This is important in view of the overall subject of this hearing.

The states have never claimed the technical expertise that would enable us to provide knowledgable insight into the area of airworthiness standards for ultralight aircraft. Our views today, therefore, are based on the pragmatic observations of our members in their experiences with ultralight operations in their states, plus additional analysis by our Staff in preparation for this hearing.

We have, both as individual states and collectively as an association, been following the proliferation of ultralight aircraft closely. About two years ago, we formed a standing committee to monitor the ultralight situation.

Over the last three years, NASAO has both formally and informally exchanged views on a continuing basis with the FAA as to what should be done about ultralights. We are sympathetic to FAA's claim that they do not have the manpower or other resources to add ultralights to the scope of their regulatory activities. This does not, however, resolve the dilemma of who should do the regulating we feel must be done.

We have also been told that there are few ultralight accidents that could be attributed to the fact that an untrained operator was acting as pilot; that "about half" of the incidents investigated by FAA involved already licensed pilots.

These claims, however, do not appear to be supported by the one comprehensive report on ultralight accidents we have been able to obtain: that published by the National Transportation Safety Board covering 98 accidents in 1983. Ninety-one of these included information on the pilot's qualifications.

Of those, 26 (28.5%) were rated pilots; 65 (71.4%) were unrated operators. The NTSB listing, sorted by the two categories is attached as an Appendix to this statement.

Although, as you will see, the accident descriptions are often sketchy, and could be subject to different interpretations, we attempted to break them out by broad <u>types</u> of accidents. The following table shows the results of our analysis.

TYPES OF ACCIDENTS/INCIDENTS
BY PILOT QUALIFICATIONS

Category	Rated Pilots		Unrated	
	No.	%	No.	%
Engine/Structural Failure	7	26.9	16	24.6
Improper operation	6	23.0	26	40.0
Possible stall with failure to recover	9	34.6	15	23.0
Possible overstress of aircraft	2	7.6	4	6.1
Midair Collision	1	3.8	3	4.6
Unknown cause	1	3.8	1	1.5
	26		65	

Allowing for the probability of misinterpretations on the two lists:

Both groups had relatively the same experiences with airframe and engine failures.

There were nearly 74 percent more accidents as percentages of the totals for non-rated pilots due to improper operations.

It could be argued that rated pilots in the "improper operations" group were, in several cases, guilty of "over expectations" of the craft they were flying. They simply did not realize that ultralights will not perform like the conventional aircraft they had been trained to fly.

The same could be said of the categories involving possible stalls and overstresses where the victims were rated pilots executing maneuvers they had been taught as routine in the course of conventional pilot training.

Much of our analysis is admittedly conjecture. But we submit that cursory though it is, there is evidence that a trained pilot is less apt to let a machine fall out of the sky through ignorance than is an untrained operator.

We have followed the efforts of the Aircraft Owners & Pilots Association to develop voluntary programs of ultralight registration and pilot competency training. Members of our Ultralight Committee have met with AOPA staff from their first moves on these programs; we have had AOPA representatives explain their proposals at our own meetings for the past two years.

We commend them on their initiative and diligence in pursuing the ultralight program. However, we have not been persuaded that those who volunteer to be safe pilots are the ones we have to worry about, nor are those who volunteer to identify and register their aircraft the people whose operations concern us.

Among the states, four -- Louisiana, Michigan, Pennsylvania, and Wisconsin -- have taken either legislative or regulatory steps to remove the voluntary aspects by requiring participation in an "FAA Approved" program. Absent federal regulation or registration, AOPA is presently the only registration/proficiency training game in town. Even the states already going this route, however, consider it a makeshift solution.

Six other states are doing some regulating under existing state statutes: Montana and Virginia register ultralights as aircraft and require at least state licenses for the operators.

North Dakota and Oregon require state registration of the aircraft.

Idaho and Washington require pilots to be licensed.

At our last annual meeting, in September, 1983, a resolution was introduced and subsequently submitted to the entire membership by mail ballot. This easily garnered a two-thirds majority of supporting votes. That resolution, in part, reads:

"a.) A program of voluntary compliance...is not sufficient to provide protection to the general public from the hazards of unsafe and capricious operations of powered Ultralights.

"b.) Although the majority of those who turn to Ultralights for sport and recreation are responsible, conscientious operators of the aircraft, the States are mandated to protect the public from all unsafe and irresponsible flight activities and must, therefore, also address the problems raised by the irresponsible and/or unknowledgeable minority.

"c.) It would be a disservice to the Ultralight community, and to aviation in general, if each state were to adopt its own set of legislative or administrative statutes and regulations to achieve the goal of Ultralight safety.

"The policy of the members of the National Association of State Aviation Officials is, therefore, based on the following:

1. NASAO will petition the FAA to make powered Ultralight vehicle registration mandatory in accordance with an FAA approved private-sector program.

2. If FAA fails to require Ultralight vehicle registration, states should consider requiring such registration through an FAA approved program.

3. NASAO also recommends that all states become involved in encouraging Ultralight operator competency training through an FAA approved program.

(It should be noted that NASAO is a voluntary organization: even though a state may approve a policy statement in principal, it is still free to disregard or adapt some details of views expressed by the majority.)

Another policy statement to which we pay due regard was passed by the nation's Governors in their annual Conference last August. This states:

> "AIR TRANSPORTATION, (E)(2): The Governors... urge the FAA to accept responsibility for registering, regulating, and monitoring the rapidly growing 'Ultralight' segment of the industry in accordance with FAA's legislated mandate to oversee all aspects of safety for all users of the airspace."

We are, as mentioned, sympathetic to the FAA's claim that budget and manpower constraints prohibit them from taking on registration of Ultralights and certification of either the machines or the pilots. FAA is short on field enforcement manpower. We trust that any congressional action to force their acceptance of ultralight responsibilities will also provide them either the additional manpower and resources required, or a policy statement that will allow them to redirect present resources to the ultralight problem.

However, a vacuum exists, and there is no one else -- certainly not the states -- with the initial experience and technical expertise to fill it.

We include, as Appendix 2 to this statement, results of a survey conducted last August at the request of the FAA. This provides a complete report on state intentions re regulation, as well as a sampling of letter comments provided by state officials. We believe this supports our claim that, despite anything you may have heard to the contrary, the last thing the states want to be forced into creating is "50 little FAAs."

Our position, therefore, can be quickly summarized:

Merely calling ultralights by some other name does not make them anything other than aircraft. We believe the Federal Aviation Administration already has the responsibility to guarantee public safety from hazardous ultralight operations just as they do with any other type of aircraft.

Thank you.

APPENDIX - 1-1

Aircraft Accidents Involving Ultralight Vehicles

Based on NTSB Report of 91 accidents in 1983

Types of Accidents involving 26 rated pilots (28.5%)

Eagle. Engine lost power; aircraft nosed over and inverted; wings folded.
Weed Hopper. Wing folded; lower right wing lift draw strut pin not located.
Waspair. Engine failure; crashed into trees; test pilot.
Mitchell. Wings folded during straight and level flight. Demonstration.
Wizard J3. Struck bystander and automobile during taxi.
Rotec. Pilot entered steep turn; wings folded. Aircraft modified.
Rotec. Pilot descended into ground in about 20 degree nose-down attitude.
Airmass. Aircraft stalled during low level turn; pilot weighed 300 pounds.
Vector. Left wing folded during steep turn. Test flight.
Robertson. Mid-air collison (with UL flown by unrated pilot).
Astro. Crashed while maneuvering in traffic pattern. Ultralight fly-in.
Eipper MX. Maneuvering at low altitude; impacted ground steep nose down attitude.
Eipper. Struck trees during takeoff; first flight.
Robertson. Aircraft struck trees during takeoff.
Rotec. Aircraft observed spiraling to ground. No power on engine.
Pioneer. Vehicle was slow; nose pitched up and entered spiral to ground.
Davis. During right turn, struck top of tree and crashed. First flight.
Rotec 3. Circling to land and struck trees. First flight.
Aerolight. Inflight structural failure of inboard right wing.
Turatorn. Wind shifted on takeoff; contacted enbankment. Tread off tire.
Eipper MXII. Indoctrination ride; aircraft crashed nose down; flipped over.
CGS Hawk. Observed to complete 270 degree turn; nose dropped to 45 degree down attitude.
Pterodactl. Engine failure on takeoff.
Quicksilver MX. Circumstances unknown.
Mitchell T-10. Observed to enter right-hand spiral and impact ground. 2-place vehicle; 2 fatalities.
Lazor 170. Stalled and crashed on first flight.

APPENDIX - 1-2

Types of accidents involving 65 unrated pilots (71.4%)

Mante. Collision with ground during landing. First solo flight.
CGS Hawk. Propellor driveshaft failed inflight.
Wizard J3. Aircraft observed to enter steep descent. First flight for pilot.
Aerolight. Collided with a tree during overshoot of landing area.
Ultra Flight. Engine lost power; aircraft collided into rising terrain.
Rotec. Previous damage from hard landing not repaired. Tailboom separated in flight.
Eipper. Collided with power lines while on pleasure flight.
Unknown. Hard landing following engine failure.
Robertson. Mid-air collision (with rated pilot).
Inter'l Ultra. Structure cable snapped during final approach.
Waspair. Encountered turbulence during takeoff; tumbled; crashed.
Eipper MX. Struck tree during low pass.
Eipper. Collided with high tension wires. Ultralight fly-in.
Barnstormer. Right wing collapsed during initial climb.
Sunburst. Aircraft stalled after encountering turbulence.
Sunburst. Dove into ground during flyby. Elevator control disconnected.
Sunburst. Wing support strut separated in level flight.
Eipper MX. During descending left turn, collided with high tension powerlines.
Aerolite. Collided with ground shortly after takeoff.
Pterodactl. 14-year-old pilot crashed during landing approach.
Sunburst. Inflight structural failure of wing cable.
Aerolite. Observed to enter slip during inverted flight.
Sunburst. Wing failure during a fly over as part of airshow.
Hattison. Nose dive into ground. Pin attaching rudder control cable missing.
Pterodactl. Mid-air collision.
Pterodactl. Mid-air collision.
Easy Riser. Aircraft observed climbing on crosswind; abruptly descended.
Eipper. Initial solo flight. Collided with trees on takeoff.
Condor II. Pilot perfomed aerobatics; left wing broke off.
Pterodactl. Pilot induced oscillation leading to hammerhead stall.
Fisher 101. Crash during turn; pilot reported mechanical failure (aileron).
Aerolite. Emergency landing following malfunction of prop drive system.
Boldwind. First flight. Witnesses observed vehicle in 60 degree bank.
Mitchell P-38. Pilot attempted turn in nose high attitude; first flight.
Pterodactl. Pilot unable to control aircraft when power was reduced.
Eipper MX. Crashed into gravel pit after making turn. Second flight.
Tomcat Tourer. Collided with tree during takeoff climb.
Weedhopper. Impacted ground in near vertical attitude. Engine at full power.
Weedhopper. Left forward wing strut separated in flight.
Manta. Power failure during initial climb; collided with trees.
Sunburst. Inflight structural failure; low level turbulence.
Teratorn. On takeoff, collided with hill.
Tomcat. Pilot encountered thermals during landing.
Pterodactl. After takeoff, pilot entered power-on spiral dive & crashed.

APPENDIX - 1-3

Bird. Pilot stuck out both feet to stop vehicle and broke both legs.
Weedhopper. Crashed in cornfield. Right wing support strut bolt missing.
Star Flight. Stalled on takeoff -- a weight shift vehicle.
Condor. Nose pitched up; struck trees and fell to nose down attitude.
Weedhopper. Struck powerline and crashed.
Tomcat. Pilot appeared to be performing wingover. Turbulence in area.
Eipper MX. Negotiating turn to final, vehicle pitched up. Third flight.
Eipper MXL. Collided with tree 20 minutes after official sunset.
Sunburst. Turned on takeoff to avoid trees; struck 20-foot tree.
Pterodactl. Engine backfired and quit on takeoff; crashed on runway.
CGS Hawk. Observed in steep uncontrolled descent.
Eipper. Aircraft wings folded during airshow.
CGS Hawk. Vehicle nosed over and descended to ground; third flight for pilot.
Robinson. Pilot performing touch and goes. Nose pitched up on landing and crashed.
Vector 610. On landing, vehicle came to sudden stop and nosed over.
Buccaneer. Observed descending rapidly; wings folded on level off.
Tomcat. Paraplegic pilot on first flight. Encountered 30-knot wind gusts.
Quicksilver E. Pilot waved at person on ground; struck powerline and crashed.
Quicksilver MX. Pilot practicing stalls. Vehicle's nose pitched up, then down.
Wizard J3. Pilot performing stalls. Vehicle entered an inverted dive and wings folded.
Lazair. Made right turn over lake; entered 80 degree nose down attitude and impacted water.

APPENDIX 2-1

NATIONAL ASSOCIATION OF STATE AVIATION OFFICIALS
Suite 400 • 1300 G Street, N.W., Washington, D.C. 20005 • 202-783-0586

Aug. 12, 1983

REPORT: State Views on Ultralights

Background: At the request of the Federal Aviation Administration, NASAO conducted a special survey of its State Aeronautics Agency members to determine what, if any regulatory/monitoring activities exist or are contemplated involving ultralight aircraft.

Information was received from 49 states -- all except Colorado, which is not a member of NASAO.

It should be noted that the responses again demonstrate that different states see their responsibilities in aviation matters differently. These are reflected in the differing statutes and legislative mandates under which the aeronautics agencies operate. It will be noted, therefore, that some states are required to regulate some aspects of ultralight activity; other states may be precluded from such regulation.

The following report is in two parts:

Part one presents the answers to four basic questions asked of all states:

> Your intentions regarding the registration of ultralights?
>
> Your intentions regarding registration and/or licensing of persons flying ultralights?
>
> Intentions regarding licensing or other approvals of ultralight landing places?
>
> Are you now collecting, or do you plan to collect, information on ultralight "incidents" or accidents in your state?

The answers to these are reported state-by-state on pages 2-5.

In addition, many comments and additional information were received from state officials (indicating a high degree of interest in this subject!). A selection of these comments, aimed at showing differing viewpoints, are summarized beginning page 6.

It should be noted that, in response to the specific question, "Do you at this time have any documented evidence of ultralights being a safety hazard in your state?", no state answered affirmatively.

SURVEY REPORT: State Ultralight Activities APPENDIX 2-2

	INTENTIONS TO...			
	Register Ultralights	License U/L Pilots	License/Approve Landing Areas	Accident Info Collection
ALABAMA	None	None	Yes - same as airports	DOT usually investigates
ALASKA	None	None	None	None
ARKANSAS	None	None	None	None
ARIZONA	Not at present	Not at present	Not at present	None
CALIFORNIA	None	None	None	None
CONNECTICUT	None	None	Yes - by statute	Yes. Keep stats and "beginning to investigate"
DELAWARE	None	None	None	None
FLORIDA	None	None	Per state law, will license.	None
GEORGIA	None	None	If open to public, will be licensed.	None
HAWAII	Bill now in legislature will require registration.	None	Yes - required by state law.	Not at this time.
IDAHO	Those w/ FAA N-numbers.	Yes	Yes	None
ILLINOIS	None	None	Yes - all landing places have to be approved	Yes, but limited
INDIANA	Those registered with FAA.	None	Must have Operating Certificate	If injuries, State Police will investigate
IOWA	If Federal Nos. for all, yes.	None	Only if established airport	None
KANSAS	Not at this time	Investigating possibilities	None	Not unless required for specific inquiry.
KENTUCKY	None	None	None	Nothing formal; State Police do report to DOT.

APPENDIX 2-3

	INTENTIONS TO...			
	Register Ultralights	License U/L Pilots	License/Approve Landing Areas	Accident Info Collection
LOUISIANA	Yes, in accordance with state law.	"Register"	Yes	None
MAINE	None	None	None	None
MARYLAND	None	None	Yes; must under State law.	None
MASSACHUSETTS	None	None	Law allows airport operator to regulate operations under certain conditions.	Yes
MICHIGAN	No, for the time being.	Will require "certification" per ASF program.	If "public use"	None
MINNESOTA	None	None	Will keep track of "landing points" for now	Retain info received.
MISSISSIPPI	None	None	None	None
MISSOURI	None	None	None	None
MONTANA	Yes	Yes	None	None
NEBRASKA	None	None	None	None
NEVADA	None	None	None	None
NEW HAMPSHIRE	If FAA N-number, must register.	Pilot of aircraft w/ FAA N-number must be certificated	Up to sponsors	"Selected cases only"
NEW JERSEY	None	None	Possibly in about 6 months	Yes. Collecting and recording.
NEW MEXICO	If FAA N-number, must register.	None	None	None
NEW YORK	None	None	Must have local governing body's approval, with state DOT concurrence.	None

APPENDIX 2-4

	INTENTIONS TO...			
	Register Ultralights	License U/L Pilots	License/Approve Landing Areas	Accident Info Collection
NORTH CAROLINA	None	None	Must meet same requirements as airports.	None
NORTH DAKOTA	Yes, effective January 1, 1984	None	Dealer demo areas only.	Yes, as check on dealers (who are licensed).
OHIO	None	None	None	Yes. State Police investigate.
OKLAHOMA	None	Will follow Part 103.	Case-by-case basis. Prohibit on state-owned airports for safety/liability	"Observing, but not collecting"
OREGON	Yes - as aircraft	None	Yes, if used regularly	Same as for other aircraft
PENNSYLVANIA	None	"Operator must possess proof of achievement of a national standard...when operating at a public use airport."	None	Nothing formal.
RHODE ISLAND	None	None	None	When reported, will investigate
SOUTH CAROLINA	None	None	None	State law requires under specified conditions.
SOUTH DAKOTA	Will register for tax purposes	None	Both approve and register	None
TENNESSEE	None	None	None	None
TEXAS	None	None	None	None
UTAH	None	None	None	None
VERMONT	None	None	None	None

APPENDIX 2-5

	INTENTIONS TO...			
	Register Ultralights	License U/L Pilots	License/Approve Landing Areas	Accident Info Collection
VIRGINIA	Presently require	Yes - present law	Yes - present law	Yes - through State Police and local police.
WASHINGTON	None	Yes - since January 1, 1983	None	None, but do receive some information
WEST VIRGINIA	None	None	No, but Commission will consider in October	None
WISCONSIN	No, but will if FAA requires N-numbers	None	Any airport required to have a certificate.	None
WYOMING	None	None	None	Collect, but do not investigate

APPENDIX 2-6

ULTRALIGHT AIRCRAFT - STATE COMMENTS and INFORMATION

CALIFORNIA — We support the self-regulatory concept of FAR Part 103. It is our intention to allow sufficient time for this concept to be fully implemented. Our legislative mandate is to foster and promote safety in aeronautics. If we perceive that public safety is jeopardized by ultralight activity... the State Aeronautics Act contains provisions for the Department to enact rules and regulations deemed necessary to protect public safety. Any admininstrative regulation promulgated would be to implement the provisions of this act.

FLORIDA — We are in the process of developing guidelines and minimum requirements for the purpose of licensing ultralight landing areas. Enforcement...will be accomplished in the same manner as is now the case with airport licensing. The ultralight flying public will be informed of our rules and requirements and urged to comply. If the ultralight landing area user simply will not cooperate, then we will refer the matter to our legal section for resolution.

HAWAII — I agree that it is necessary to exert a greater degree of control of the growing ultralight activity. It has yet to be proven that AOPA or EAA have the necessary resources or resolve to assure the orderly growth of ultralights. Since the laws of Hawaii require the Department of Transportation to "cooperate with and assist the federal government...in the development of aeronautics," we are prepared to provide the resources necessary to assist in the controlling of ultralights.

IDAHO — Idaho Aeronautics has directly supported the growth of the ultralight sport within this state and worked towards the smooth integration into the established aviation community. This has been accomplished through encouragement of state ultralight association meetings, publications, and fly-ins. We are convinced that this sport can be a tremendous boost for aviation if treated responsibly. In our experience, the vast majority of the ultralight pilots are responsible and adhere to reason and the existing federal and state laws when aware of their existance. Unfortunately, there is that minority whose actions point to self destruction and, in so doing, frequently endanger innocent bystanders and/or property. This faction will destroy the ultralight movement unless they can be controlled. In our opinion, peer pressure is totally inadequate for control of this minority which only recognizes laws, authority, and the willingness to prosecute. Accordingly, we believe the present system will change by either the Federal government accepting their regulatory responsibility, or the states will exercise their rights individually to provide the authority required.

KANSAS

The Kansas Aviation Division regards ultralight aviation as an important new industry; however, we believe that the failure to establish pilot licensing procedures in the same manner as all other certificated pilots are licensed is an omission in the administration of the program which is detrimental to the public interest and degrading to the entire aviation community for the simple reason that it is not responsive to the public safety requirements of people sharing the airspace and persons on the ground.

LOUISIANA

As you may expect, this Office has received some criticism for the proposal to register ultralight aircraft. I suspect that such criticism forms a strong basis for many of the states' desire to "avoid" this situation and to continue to suggest that this is a federal problem. While I have no problem in agreeing that federal registration would be highly desirable, I think the facts of the matter would indicate that such is not likely, nor would the agency be able to run a very effective program even if it saddled itself with this responsibility. Likewise, we do not see that a completely voluntary effort on the part of the aviation community will begin to be satisfactory. We feel that unless some type of regulatory activity is in place to promote this sport, to forward safety information to users, and to use the appropriate police power to protect private citizens from abuse by individual "bad apples," that ...ultralight regulation will soon be handled by each individual local government -- a situation which I'm sure all would agree would be intolerable. I think we owe it to ourselves, to the industry, and to the sport to take a realistic attitude in this matter.

MICHIGAN

I have the benefit of just returning from the NASAO Ultralight Committee meeting at Oshkosh, and it is not now our intention to register ultralights. The Air Safety Foundation, the manufacturers, and dealers have expressed their intent to see that all ultralights display the N numbers reserved to ASF by FAA. Because this group has been effective in reducing the problems that had gained our concern, Michigan will refrain from registration for the time being. Prior to Oshkosh '83, we had intended to issue licenses for both pilots and aircraft, and a state bill has been introduced for that purpose. I now intend to ask for an amendment that would read, "certification as issued by or approved by the United States" (new words underlined). Enactment would allow ultralights to legally fly and give the ASF program legal status, (and) strengthen the self regulation that appears to be working.

MISSOURI

At this time, this Department does not perceive a degree of activity or other conditions regarding ultralights that would require a regulatory reaction by the State of Missouri. The self-regulation of ultralight activity is commendable, and it is our hope that it is successful. There exists, however, a potential for tragedy with the absence of enforcement authority. It is our opinion that such enforement authority rests with the Federal Aviation Administration and in spite of the fact that they have not chosen to exercise it, we feel they will eventually be forced

to. The unhappy thought is that such leverage will come as the result of the loss of several lives.

NEBRASKA — I have no intention of trying to regulate ultralights in any way, shape, or form. I hope the public permits me to maintain that status. We have had two serious ultralight accidents recently; one a fatality, and immediately the media is asking me what I intend to do about it. So far, I have been able to refer to FAR 103 and state that I have been pre-empted by it. Because of its inadequacies, however, that may not work for long.

NEW JERSEY — Interim Policy for Landing and Takeoff areas for single-seat ultralights: Operators of single seat ultralight aircraft may takeoff and land from any area of land they determine to be suited for ultralight aircraft operations providing all of the following conditions are met:

(1) All operations and general conduct of aeronautical activities are done in full compliance with FAR Part 103 and any other applicable rule, regulation, or order issued by the FAA; (2) All activity is recreational in character and is not done in the direct furtherance of any profit making or commercial enterprise; (3) All operations and the conduct of aeronautical activities must not interfere with the safety or operations of an existing licensed aeronautical facility; (4) The operation of a takeoff and landing area for ultralight aircraft must not be disallowed by the municipality in which it is situated; (5) The use of any area of land by ultralight aircraft for takeoff and landing must have the approval of the land owner IN WRITING. Verbal approval alone is not acceptable; (6) Ultralight flyers (pilots) must be briefed or notified of any operation restrictions or local conditions of concern or interest which may affect them or the potential operation or conduct of their flying activity.

As conditions mandate, takeoff and landing areas for ultralight aircraft are subject to remaining in compliance with any further rule, regulation, or order issued by the Commissioner of Transportation, Division of Aeronautics, or the Federal Aviation Administration.

NEW MEXICO — Since ultralights are technically aircraft by our definition, they are subject to all safety regulations relating to other aircraft. However, I do not foresee any concerted enforcement effort on our part unless the problem with these vehicles becomes a great deal larger than it is now. If a local problem exists, local law enforcement officials can enforce our regulations and utilize them as necessary to resolve their problems.

NORTH DAKOTA Effective January 1, 1984, N.D. State law requires this agency to license Ultralight dealers in the State. We believe that an educational program with the dealers will suffice as to how they market ultralights and flight instructions they give to purchasers of ultralights. ...Enforcement of adequate landing facilities by dealers, and repair shop and parts, is required for a dealer to obtain a State Ultralight Dealer's License. A licensed dealer must report monthly all sales of Ultralight vehicles, name of manufacturer, purchase price, and name and address of purchaser. This information required to enforce state registration for Ultralights and the collection from the purchaser of an excise tax on the purchase price by the Aeronautics Commission at the time of state registration.

OREGON Since we consider ultralights to be aircraft, "landing places" used by them are subject to the same statutory provisions as any other airport, i.e., site approval by our agency is required; facilities open to the public must be licensed annually and personal-use facilities must be registered annually. However, under certain conditions, a site may be used on an occasional basis without being classified as an airport.

We disagree pointedly and wholeheartedly...that FAR Part 103 preempts the right of any state or local authority to impose operational rules on ultralight activities. Oregon Revised Statutes clearly include powered ultralights in the definition of aircraft. [ORS 492.010(4)] We firmly believe, with strong support from our legal counsel, that in this case, state law overrides the action taken by the FAA to impose a Rule which says that under certain conditions these vehicles are not aircraft. Furthermore, ORS 491.100(3) charges our Transportation Commission with protecting and insuring the general public interest and safety; the safety of persons receiving instruction concerning, or operating, using or traveling in aircraft; and, of persons or property on land or water... We see no language here that absolves us of responsibility under any conditions for the safety of ultralight operators themselves, as well as operators or passengers in other aircraft and persons and property on the surface.

While the concept of "self-regulation" is an admirable one with an attractive ring to it, we feel quite strongly that the voluntary aspect of the present program is overly idealistic. Primarily for that reason, we do not believe adequate protection can be afforded to the general flying public from those individuals who choose not to avail themselves of the training programs being offered. We are all within reach of the safety objectives we continually strive for. Why not take that final necessary step and make it mandatory for any individual to possess a certificate issued through an FAA-approved program before he/she is authorized to operate a powered ultralight? This could be done without extensive involvement by the FAA other than to review and issue approval of the ASF program and prescribe and provide a federal certificate to be issued by the designee upon completion of training.

PENNSYLVANIA At this time, and until the self regulating concept has proven to be ineffective, the States should support the FAA in its regulatory role and AOPA in its industry self regulating programs. The States, if inclined to regulate ultralights, should at the maximum, require ultralight vbehicles to be registered under a national registration program (AOPA ASF) and ultralight pilots or operators achieve a national standard of competency. State regulations requiring State licensing of pilots and ultralight vehicles will only duplicate a program in effect within the industry and will do little to affect safety. Little will be learned from the federal effort to allow some industry self regulation if states unite to impose ultralight regulations and standards.

VERMONT At some of our airports where ultralight activity is the highest, there have been some local rules established concerning specific areas for operation on the airport, traffic patterns, altitudes, etc. These rules were established through mutual agreement and cooperation between airport management and ultralight operators. This arrangement has been working reasonably well to date.

Off-airport operation of ultralights, on the other hand, has presented some problems. Complaints are received from the public who object to ultralights being flown at low altitudes over built-up areas. While many complaints are directed at what is considered to be a potential danger from ultralights operating in close proximity to the ground, the most numerous objections involve the noise generated by such operations.

Ultralight operators involved in the type of operation noted above may not be aware that they are in violation of FAR Part 103, which prohibits low flying over built-up areas. As a suggestion, a copy of FAR Part 103 should be included with other information furnished by ultralight manufacturers to customers purchasing ultralight vehicles. There still seems to be a wide-spread belief among current and would-be ultralight owners that no rules or regulations governing ultralight operations are in effect.

Mr. GLICKMAN. That will conclude the hearings for today. We appreciate the witnesses coming. As I said before the hearing, the record will be open for 10 days if anybody wishes to add a statement to the record.

The hearing is adjourned.

[Whereupon, at 3:55 p.m., the subcommittee was adjourned.]

APPENDIX

ADDITIONAL MATERIAL SUBMITTED FOR THE RECORD

Four Dollars

April 1, 1984 Vol. IV. No.7

Aviation Safety™

The accident and safety report to pilots and aircraft owners

Ultralight safety outlook: dismal but getting better

Ultralight aviation has arrived at a watershed period in its development as a recreational (and perhaps even useful) enterprise. The *laissez-faire* attitude which hitherto has prevailed with regard to ultralight safety (basically, "you pays your money and you takes your chances") has given way to real efforts at self-policing in both the construction and the operations of ultralight aircraft.

Meanwhile, serious attempts to make ultralights produce profit for their owners—and particularly the entry of two-place models that will be the basis for ultralight training programs—may bring economic forces to bear on the safety issue, to good effect.

All this is good news because, until recently, ultralight aviation has been a rather dangerous and ill-governed pursuit.

How risky is flying an ultralight? Is it just another form of "chain saw murder" or a recreational pastime no more hazardous than scuba diving? Particularly, how does ultralight flying stack up against flying "real" aircraft?

Only very lately has any coherent set of data been assembled to test the question, and even this data has inherent inaccuracies. *Aviation Safety* has reviewed the currently available data and can conclude tentatively that:

- Ultralight flying is perhaps ten times as risky, in terms of fatal accidents, as flying a conventional aircraft.
- Structural failures—whether due to faulty design, maintenance or pilot-induced overstress of the airframe—have been involved in a shockingly large proportion of ultralight accidents. Compared to conventional aircraft, structural failures occur perhaps 100 times as frequently.
- After structural failures, lack of experience in ultralight flying (whether the "pilot" is a total novice, or has an FAA license but no UL experience) is perhaps the single largest safety problem.
- Certain ultralight designs (designs which, luckily, the marketplace has mostly rejected) are almost irrefutably unsafe.
- The objection most often heard from pilots of conventional aircraft—that ultralights pose a grave collision threat at established airports—apparently has little basis. Due perhaps to a combination of common sense by ultralight pilots, the creation of special ultralight "airparks," and the sheer vastness of available airspace, there have been no cases of collisions between ultralights and conventional aircraft. (There have been a few between ultralights, however.)

Paucity of Data

Believable data on ultralights and their safety records is almost impossible to come by. Groups within the industry told *Aviation Safety* individually that they would welcome reliable accident record-keeping, but said the industry has not yet matured to the point where a common trust could be established.

Since ultralights by definition under the new Part 103 do not require registration for the airplane or a license for the pilot, there is no rule requiring reports on ultralight accidents. (In addition, there is no rule requiring that manufacturers of ultralights keep tabs on how many aircraft they sell, or the owners' addresses if a defect in the planes should be discovered. And until lately, there has been no standard of design or construction for ultralights.)

The only concerted governmental effort to weigh the safety impact of ultralights has been by the National Transportation Safety Board, which last spring instructed its investigators to begin probing certain ultralight accidents—mainly those which produce deaths or serious injuries. This effort will help NTSB to decide whether to go deeper into the ultralight arena (i.e., by recommending increased regulation of the airmen and aircraft), or return to a kind of "benign neglect" stance which has characterized NTSB, FAA and the government generally over the past five years as ultralight aviation has come of age.

NTSB investigators began around February of 1983 to probe ultralight accidents. After nearly a full year, the Safety Board's computer in mid-January printed out a list of the ultralight accidents on file—104 cases involving 106 aircraft (there were two mid-air collisions). To this list, *Aviation Safety* added five more crashes in which the aircraft had to be treated by NTSB as conventional planes because they had N-numbers, even though the models were clearly UL types.

In all, then, there were 111 ultralight aircraft involved in mainly serious or fatal crashes during a period of approximately a year. All concerned with the data admit that it is far from comprehensive. Although most fatal accidents probably are on the list, many serious-injury accidents may have been missed. As for the minor- or no-injury accidents (assumed to be in the thousands), these largely escaped NTSB attention.

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Thus, no conclusions can be drawn about the total number of ultralight accidents, and any conclusions about serious or fatal accidents must be taken with a grain of salt.

Still further, when it comes to assessing the *rate* of accidents, a measure of aircraft hours-flown (and thus, active aircraft) is necessary. With ultralights, such numbers are simply unreliable.

First, there is the question of how many active ultralight aircraft existed during 1983. "The Number" has been a victim of wildly exaggerated claims, mainly by manufacturers of the aircraft, each trying to boast more sales than his competitor. Estimates provided by ultralight industry spokesmen ranged as high as 40,000 in the exuberance of early 1983.

Lately, the number has been trimmed somewhat. Roy Muth, head of the Powered Ultralight Manufacturers Association (PUMA), told us he estimates there are 35,000 ultralights in existence. When we asked where the figure came from, he said it was a "projection based on a figure in a newspaper article." Muth said the ultralight industry has not matured to the extent that manufacturers are willing to publicly share their actual production figures.

The ultralight division of the Aircraft Owners and Pilots Association has been trying to keep tabs on numbers of aircraft and accidents. Its chief, John Sheehan, told us if the 35,000 is discounted by estimating how many UL kits are never completed, how many are tucked away in garages and never flown, how many have been wrecked, etc., the result may be about 17,000 to 22,000 ultralights "in flyable condition." Sheehan said he feels the number is probably at the high end of his stated range. But he noted that there is no way to confirm it.

We posed 15,000 aircraft as our starting point. Neither Sheehan nor Muth agreed with this estimate, but both conceded that no proof could be offered to refute it.

But fleet figures alone are not enough. If general aviation and ultralights were compared on the basis of fatal accidents per aircraft, they would seem roughly equal. However, it would not be a relevant comparison, since the conventional aircraft, on the average, flies many more hours per year than the ultralight.

Even though some ultralights fly hundreds of hours per year, the average figure is probably somewhere around 20 hours yearly, according to several estimates.

FAA figures for hours-flown and active aircraft can be divided to show the average general aviation aircraft flies about 126 hours a year, or some six times as much.

The guesstimates of 15,000 aircraft and 20 hours per year have been used to create the tables on pages 2 and 3, comparing general aviation and ultralight accidents. The calculation results in an estimate that the rate of fatal accidents in ultralights (57 accidents in 300,000 hours) is about ten times as much as in conventional aircraft. This is no absolute figure—just a guess—but as good as anything available.

The contrast may seem striking, but within the range of allowable error, things may nonetheless seem better than many observers might have expected, given the totally unregulated atmosphere of UL flying.

Other measures that can easily be calculated for conventional aircraft, such as the total accident rate or the ratio of fatal accidents to all accidents, simply cannot be guessed at in the absence of solid UL figures.

In-Flight Failures

However, some of the ultralight community's most serious problems do not require a great deal of calculation and proof, since they are all too evident. One of these is the share of in-flight structural failures.

In conventional general aviation, the break-up of an airframe is an extremely rare event, notwithstanding some poignant comparisons that can be made between models of aircraft (e.g., the V-tail Bonanza, which has a drastically higher rate of airframe failure accidents than its straight-tail counterpart). Throughout general aviation, airframe failures account for only about 1.7 percent of all accidents, and about 6.7 percent of fatal accidents.

On ultralights, NTSB's preliminary printout divides the accidents along "operational" and "structural" lines. Using this gauge, 38 of the 111 accidents involved "structural" problems. This is an extremely large proportion.

But worse, if rates of in-flight airframe failures are posed, the per-hour

Table 1
Estimated 1983 Fatal Accident Rates
Ultralights vs. General Aviation

	Fatal Accidents	Active Aircraft	Hours Flown	Rate per 100,000 hours
Ultralights	57	15,000	300,000	19.00
Gen. Av.	548	207,000	32,776,000	1.67

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Aviation Safety (ISSN 0277-1764) is published bimonthly by Belvoir Publications, Inc., 1111 East Putnam Avenue, Riverside, Conn. 06878. Robert Englander, Chairman and President; Donn E. Smith, Executive Vice President; Michael Pollet, Senior Vice President, General Counsel; Richard B. Weeghman, Vice President; Stanley Person, Vice President, Finance. Second Class postage paid at Riverside and at additional mailing offices.

Subscriptions: $39 annually (24 issues). Canadian subscriptions are $55. Single copies are $4.

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frequency of break-ups in ultralights could be as high as *100 times* that of conventional aircraft.

Whatever the aircraft, airframe failure commonly is laid to one of three causal areas:

(1) The design or construction of the aircraft could be faulty, such that it does not have the necessary strength.

(2) The maintenance procedures of the aircraft (as well as the preflight inspection), could fail to catch areas of wear and fatigue that weaken the airframe.

(3) The pilot could, through lack of skill, experience or knowledge, impose loads on the airframe that are greater than it was designed to withstand.

In both ultralights and conventional aircraft, there are undoubtedly cases of each, and pilots surely are responsible for ill-maintained airframes and those broken by overload. But as with conventional aircraft, the ultralight industry tends to shift as much of the blame onto the pilot as possible, and away from the manufacturer.

Examination of the accidents on a model-by-model basis, however, reveals that some aircraft seem to have a much higher proportion of structural failures than others.

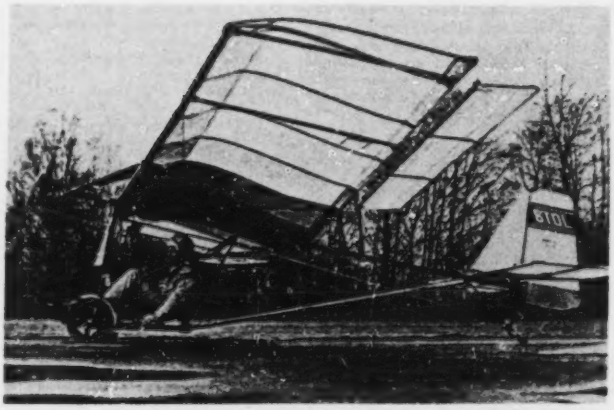
As shown in the table on page 4, structural failures encompass some five out of eight listed crashes of the Airmass Sunburst, for example (all of the Sunburst's fatal crashes). This in our opinion points to a serious doubt about the integrity of the Sunburst design, and we consider it lucky that (a) only a few hundred are believed to have been sold and (b) the company is now out of business. If we had a friend with a Sunburst, we would urge him to junk it.

In contrast, the Robertson B1-RD produced no structural failures among five listed accidents. Likewise, the fleet of the nation's largest ultralight manufacturer, Eipper, had only four structural failure accidents among nineteen tallied. While it admittedly isn't a lot of data, it at least points in the right direction, we believe—toward structural integrity, rather than away from it.

Pilots Induce Problems

Unquestionably, some of the airframe failures result from things the pilots do. Conventional aircraft in the normal category are designed, built and tested to be safe up to 3.8 Gs positive and 1.5 negative. Ultralights, despite some advertising claims of design and testing envelopes that are aerobatic in scope, probably are no stronger than conventional aircraft, and can be much weaker. And until recently, there was no standard of design or testing, so that most ultralight pilots were actually part of the test-pilot corps for the manufacturer, whether they knew it or not.

But more important, the designers of



One of the later models of ultralights to arrive, the Robertson B1-RD. It had no structural failure accidents among five aircraft on NTSB's 1983 list.

conventional aircraft spent countless thousands of hours at the drawing board, in the wind tunnel and sometimes aloft, making certain that the handling qualities of their airplanes did not include an undue potential for the pilot to break the airplane. Static and dynamic stability and control, stick-force-per-G, flutter, and other such items have been investigated.

With ultralights, designers early on may not have even recognized the terms, let alone dealt with such issues in their designs. In some cases, aircraft enter a regime of marginal stability: the pilot pulls back on the pitch control and gets too much nose-up reaction; responding to this, he pushes forward and gets too much nose-down reaction; then he pulls back more . . . and this continues until the aircraft is totally out of control, and if the speed and stick force are great enough, the airframe breaks. The event is known as a "pilot-induced oscillation," or PIO.

The PIO potential has been designed out of most general aviation aircraft, but is readily apparent in certain ultralight designs. Sometimes the oscillation is triggered by a change in power, and the PIO is a combination of stick and throttle inputs. In some crashes of the Pterodactyl Ascender series, for instance, witnesses have seen the nose pitching up and down and heard the engine sound rise and fall, shortly before the in-flight break-up.

It can be argued that such events would not occur if the pilot were well trained and experienced, and if he stayed within the operating limits of the airplane. However, it may also be argued that despite the worst efforts of thousands of ham-handed student pilots, PIO-related crashes in general aviation are largely a thing of the past, largely because the designer anticipates the pilot's mistakes. To the degree that ultralight design standards become this mature, PIOs may also disappear in UL flying.

Construction and Maintenance

In large measure, some of the earliest and worst aspects of ultralight construction practices have disappeared without need for anything but the standards of the free marketplace. Nonetheless, some models may still retain "hardware store" fittings, made of mild steel that can stretch and fatigue. Ultralight buyers have come to recognize and value the alloy aircraft-quality hardware that now

Table 2
Estimated Structural Failure Accidents
Ultralights vs. General Aviation

	Structural Failure Accidents	Hours Flown	Rate per 100,000 hours
Ultralights (1983)	38	300,000	12.67
Gen. Av. (1964-1977)	291	240,000,000	0.12

is seen at virtually every fitting on a top-brand-name ultralight, however.

Still, some designs may even today employ fittings that crush aluminum tubing—rather than protect the member with a bushing—and methods of safetying fasteners may still leave much to chance.

In two cases involving Weedhoppers, for instance, where a bolt holds the wing struts on the end of the landing gear axle tube, the bolt and its self-locking nut were found to be missing after each crash. In a case involving an American Aerolight Eagle XL, the manufacturer developed an improved propeller drive adapter, which the plane owner's dealer installed for him. The four bolts holding the propeller on the drive had neither washers nor safety wire, and the installation instructions did not specify a torque value. After the fatal crash when the propeller drive failed some two flight-hours later, two of the bolts were found sheared and the other two had backed out, investigators said.

Practically all the nation's ultralights rely on fabric as the wing covering, and almost all the fabric in use is Dupont's Dacron, borrowed without appreciable modification from the sailing industry (indeed, sail lofting companies often are subcontractors that make the wing envelopes for ultralight manufacturers).

Ironically, this universal use of sailcloth has meant that virtually all ultralights are susceptible to serious deterioration of their fabric coverings due to ultraviolet light from the sun. In as little as six months to a year, an ultralight constantly parked in sunshine (especially with a dark-colored design scheme) may be rendered *unsafe* due to fabric so weakened that a stiff forefinger may be poked through it (this is now a recommended preflight test for ultralights).

It has been asserted that since some ultralight manufacturers take no special pains to keep the sailcloth out of the light, a measure of the cloth's strength may be lost before it even gets put on the airplane.

Many ultralight owners may still be unaware of the extent of the ultraviolet hazard, although manufacturers have now begun to supply warnings about it with deliveries of new aircraft. Since a new fabric set can cost $800 to $1,000 or more, an ultralight owner may be tempted to continue to fly with a deteriorating wing, and may seek to pass the condition on to an unwary buyer. Because of this hazard alone, we can categorically recommend against buying a used ultralight, unless all-new fabric is installed as a condition of sale.

Even with new and strong fabric, other features of the cloth demand special attention. For instance, if a thread is used that is stronger than the woven threads of the cloth, it will tend to cut into the weave, and weaken a seam. In some cases, stretching loads build up stress areas in the fabric where tearing may begin. In others, grommets, rivets, basting strips and the like, intended to strengthen the cloth, may actually produce such high-stress areas.

In the crash of an American Aerolights Eagle two-place ultralight at Miami, Florida, two flight instructors died when the wing failed in flight. The fabric was torn in the area of the wing inboard trailing edge. NTSB's investigator said the manufacturer had learned that this area tended to wear, and had produced a kit which had been mailed to owners, free of charge, about a week and a half before the crash. Due to a mix-up in mailing addresses, the kit was never received and installed on the accident aircraft. However, since the kit involved squeeze-together grommets that would puncture the fabric, the investigator was unsure whether the kit would have prevented the accident, or merely created a different stress area.

And even when airframes and construction are up to snuff, owners of ultralights may not be able to stand the temptation to make their own modifications. A classic case involved the owner of a Lazair kit who died on November 15, 1983. The Lazair is unusual in having two engines driving two propellers each. The owner apparently sought to improve on the design, and mounted four engines driving one prop each. He was seen flying over California's Lake Elsinore when the plane started a right turn, entered an 80-degree nose-down attitude, and struck the water. A search failed to locate the body. The plane's Nos. 1, 2 and 3 props were broken. The No. 4 prop was undamaged.

Experience and Training

Getting beyond the inordinate incidence of airframe failures, the next largest problem ultralights face is inadequate training and experience of the pilots.

It shows in the accidents. Some 14 percent of the listed crashes (16 cases) involved pilots who were taking their first flight—either in the specific type of aircraft flown, or in any aircraft.

Over-all, we found 34 percent of the accident pilots held some form of FAA flying license. But ultralights may pose such special flying qualities that certified pilots could actually be at a disadvantage without specialized UL training and instruction.

There are variations on the theme, and each is hazardous. There is, for instance, the pilot who has never flown at all and sets out to solo an ultralight. Or the pilot who has flown conventional aircraft and assumes his skills transfer to the ultralight. Or even the pilot who is at home in one kind of ultralight, and figures a new model will present no surprises.

On November 5, 1983 at El Mirage, California, a pilot holding a private license with a hot air balloon rating agreed with the owner of a Delta Wing Lazor 170 that only taxi testing—not a

Table 3
Ultralight Crashes By Make/Model

Manufacturer	Common Model	Injuries F	S	M/N	Aircraft Crashes	Pilots with licenses	(%)	"Operational"	"Structural"
Airmass	Sunburst	5	3	0	8	1/7	(14%)	3	5
American Aerolights	Eagle	7	1	0	7	3/7	(43%)	4	3
Eipper	Quicksilver MX	9	6	5	19	6/18	(33%)	15	4
Pterodactyl	Ascender II	7	4	1	12	2/9	(77%)	6	5
Robertson	B1-RD	1	4	0	5	2/5	(40%)	5	0
Rotec Engineering	Rally 2B	3	2	1	6	5/6	(83%)	3	3
Waspair	Tomcat	2	4	0	6	1/6	(17%)	5	1
Weedhopper	Weedhopper	5	2	0	7	1/5	(20%)	4	3
Misc	——	20	21	2	41	12/35	(34%)	26	14
Total		59	47	9	111	33/98	(34%)	71	38

Includes two mid-air collisions (Robertson vs. Robertson, Pterodactyl vs. Pterodactyl). Data from: NTSB printout of 104 accidents involving 106 ultralight aircraft, February 23, 1983 to January 16, 1984, plus NTSB preliminary reports on five N-numbered ultralights.

The Swallow, a rugged ultralight *built from the outset to aircraft-quality standards of construction, had no accidents on NTSB's list.*

takeoff—would be attempted. Nonetheless, after a couple of groundhops, the weight-shift aircraft took off and climbed to about 100 feet before stalling, crashing and killing the pilot. The pilot had received no instruction in ultralight aircraft, investigators said.

An airman was a partner in a company owning a Pterodactyl Ascender II. Although he held no pilot's license, he did have 35 hours of ultralight time. Shortly after takeoff on August 27, 1983 at Haskell, Oklahoma, the plane was seen in a climbing turn, then a nose-down dive with the engine revving. It continued in a spiral dive until ground impact, killing the pilot. NTSB's investigator said experienced Pterodactyl pilots told him "application of power during a departure turn stall produces erratic pitch responses." The investigator also noted that 13 pounds of baggage was found stored loosely in the inboard wing panels, free to shift fore and aft during maneuvers.

On November 4, 1983 near Sparks, Nevada, a two-place Mitchell T-10 on a training flight was flying straight and level about 200 feet AGL when the craft began a pitch oscillation and then fell into a steep spiral. The crash killed the instructor, who held an FAA-issued CFI license, as well as the student, who held an FAA private license. The instructor pilot was described as experienced in "powered aircraft, gliders and ultralights," and had completed the factory school for the T-10 in midsummer.

On November 12, 1983 at Miami, Florida, a pilot died when his Wizard J3 collapsed its wings after what witnesses said was a somewhat steep diving recovery during a series of practice stalls. The pilot, age 19, held no FAA licenses, but had some 500 hours in ultralights employing weight-shift control. He had obtained four hours of dual instruction in ultralights plus approximately five hours of solo flight in the Wizard, which has a conventional three-axis control system.

Aviation Safety considers the operational problem a dual one. Obviously, accidents are occurring due to lack of the pilot's familiarity with the machine. But not so obviously, the machines seem to be somewhat hard to learn. True, a share of operational accidents must be laid to raw novices blithely climbing into ultralights without proper training. But a share could also be laid to the unusual handling qualities, the totally non-standard control systems and other quirks of the given model. On some ultralights, pushing the left pedal taxis the plane to the left; on others, to the right. On some models, the stick controls rudder and elevator (no ailerons). On one model, full right stick travel defeats any ability to control pitch.

Some other operational accidents can be clearly laid to various excesses and lack of due caution on the part of the pilots. A motorist along an interstate near Fargo, North Dakota, on November 6, 1983, noticed an ultralight flying nearby. The motorist waved, and the pilot of the Eipper Quiksilver E waved back. As the driver exited the highway, he looked in his rear-view mirror and noticed the ultralight entangled in powerlines that the pilot had failed to see. Though the plane fell to the ground in flames, the pilot survived.

On the same day at Santa Ana, California, the pilot of a Goldwing was seen doing wingovers with banks of 60 to 70 degrees. It then entered a steep climb, followed by what several qualified witnesses described as a "flat spin," that continued into the ground, killing the pilot.

Some Good News

But within the realm of "operational" ultralight accidents, the figures hint at some very good signs. For instance, ultralight pilots hardly ever are caught in the "adverse weather" crashes that are the single largest killer of general aviation pilots. The UL equivalent—turbulence, which can send the lightly wing-loaded craft out of control or break the airframe—is mentioned in only six of the 111 accidents.

The fear of general aviation pilots contemplating the UL "invasion" has been that the rag-and-wire craft will clutter the airport pattern and, being hard to see, will loom in front of the pilot of a conventional craft. The fear has transferred to some in FAA, who worry that an ultralight in the intake of a jumbo jet can conceivably cause a major crash.

Although there are no guarantees, none of this has happened. In 1983, there were two reported collisions between ultralights, and there were numerous near-miss reports from pilots of conventional aircraft. But there were no UL-general aviation collisions in 1983, *nor in the five-year history of powered ultralights.* During any given year, by comparison, general aviation runs up some 25-30 collisions by itself.

Some of this good news can be attributed to work, primarily by AOPA, to establish UL patterns within the center of regular airport patterns, providing reasonable safety so long as all parties recognize the rules.

Another share of the honor can be accorded UL pilots themselves, who sensibly stay away from conventional aircraft as much as possible. We tallied some 41 accidents in which we could determine where the accident aircraft originated its flight, and found 63 percent (26) came from vacant fields or ultralight parks. Of the other 15 cases, only one aircraft was operating at a towered field. This leaves 14 at uncontrolled fields, where a no-radio Aeronca and an ultralight have equal rights and responsibilities (not to mention performance).

Curative Actions

While the first five years of ultralight teething may have been difficult and even somewhat deadly, there are many bright and hopeful signs in all problem areas.

Quite recently, PUMA has completed a set of certain common standards for design, construction and testing of ultralights that its members are pledged to follow. Although it is not required (the program is purely voluntary), PUMA expects to obtain FAA's endorsement of the standards. Each member manufacturer will install a placard on its aircraft, announcing that it meets PUMA standards. Members include two of the reputed "Big Three" ultralight makers—Eipper and Rotec, as well as five other, smaller manufacturers. PUMA hopes all the major manufacturers will join the effort once sales of the PUMA-made aircraft show buyers prefer a plane built to some standard—as opposed to none at all.

On their own, reputable PUMA members and non-members have begun

to put more resources into engineering and testing of their aircraft. They have begun to set up systems whereby "service bulletins" can be sent to owners when a safety problem develops. (There is no equivalent of an Airworthiness Directive in ultralights, since nothing is regulated or mandated.) They have begun to issue much more detailed construction and maintenance information. All are voluntary programs.

As for training, most manufacturers now make some attempt to get customers to obtain instruction before flying their own ultralights. Some merely urge, while others enforce the idea—at least one manufacturer won't send the customer his propeller until he proves he has gotten flight training.

Another large and fruitful effort is being made by the ultralight divisions of AOPA and the Experimental Aircraft Association. AOPA's programs—by far the largest—involve help in setting up and keeping ultralight airparks open, as well as training and "registration" (*licensing* is an unpopular term) of ultralight pilots.

In an atmosphere of deregulation, FAA has given broad powers to the pilot associations. Ultralights by definition have only one seat, but an exemption to the rule can be granted by AOPA or EAA for two-place models to fly under Part 103 and provide dual instruction. EAA requires the applicant to hold a regular CFI license, while AOPA has other stipulations, mainly involving experience in ultralights.

EAA and AOPA have each granted roughly 100 waivers to allow two-place operations. AOPA, encouraging registration of UL pilots by touting the "benefits" (there will come ultralight flyins where non-registered pilots won't be allowed to fly, and insurance may become a problem for them), has created a system of "examiners" to assess the applicants for registration. So far, AOPA has signed up some 2,300 pilots, about half of whom are examiners.

There is clearly a need for enforcement, since of the six accidents involving two-place ultralights in our list, two were outside the pale of the rules. In the Miami crash which killed two pilots in an American Aerolight Eagle 2 (mentioned earlier), investigators found there was no waiver or other document to allow dual instruction.

At Dallas, North Carolina on September 16, 1983, a passenger suffered a severely bruised neck when a two-place Teratorn groundlooped on takeoff. The pilot, who claimed it was a training flight, apparently had some concern about his passenger's weight, since he asked that question before takeoff. After hearing the answer, he confidently picked a 600-foot runway instead of a parallel, 1,400-foot one. During the takeoff roll in a crosswind, the rubber tread came off the tailwheel and sent the plane out of control.

The passenger told investigators he was not taking lessons, but had paid the pilot for the ride. There were statements by the passenger and another witness who said the pilot had been giving short rides for $5 to $10 and one-hour rides for $30. The pilot told investigators he was an AOPA-registered ultralight examiner and was operating the Teratorn under an exemption from AOPA. Investigation disclosed the pilot, who held an FAA student pilot's certificate, was indeed an AOPA ultralight examiner, but did not have the waiver for the airplane.

Still, when such glitches are sorted out and most two-place ultralights are operating under honest waivers, there promises to be a great enhancement in UL safety. Of more than 60 models of ultralights now on the market, there are at least 20 dual-seat models offered. Student pilots who don't have to learn to fly the first time (or die trying) are sure to be safer pilots in the years of ultralight flying to come.

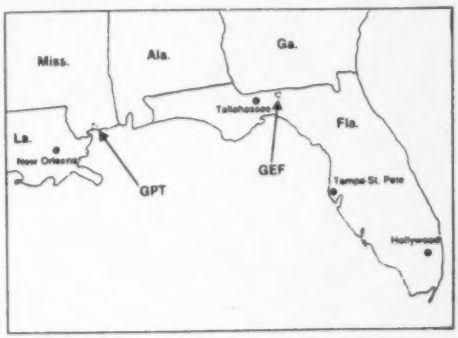
From Safety Board Files

Modern navigational radios have come to work so well, and VOR-DME navigation has become so ingrained, that much of aviation's time-honored mistrust of the omni signal has evaporated. It is so easy to fly cross-country, looking up frequencies and tuning in VORs, getting quick "lock-ons" from the DME, and flying onward in confidence, that pilots these days may have forgotten the "horse sense" basics of navigation by VOR.

A case in point is the crash of a Gulfstream American Tiger on January 13, 1982, near Monticello, Florida, in which a 55-year-old pilot escaped uninjured despite destruction of the plane when it struck trees in a swamp while landing out of gas after nearly a seven-hour odyssey.

The 451-hour private pilot, an engineer by occupation, was a resident of California who apparently was heading in that general direction from Florida. He had taken off at 7 a.m. from Hollywood (North Perry), Florida, with a flight-planned destination of Tallahassee. Such a flight would involve crossing the state to the northwest, passing Tampa-St. Petersburg, and either continuing across a bight of the Gulf of Mexico before making landfall near the destination, or hugging the coastline.

The pilot arrived in the Tampa-St. Petersburg area about 8:30 a.m., he said, and with weather somewhat marginal, he requested a special VFR clearance into St. Petersburg. This was denied, he said. Upon hearing this news, he said, he canceled his VFR flight plan and decided to make straight for New Orleans, Louisiana. He therefore climbed from his



Tiger pilot's odyssey *led him to Greenville, Florida, when he thought he was arriving at Gulfport, Mississippi—a discrepancy of a mere 275 nautical miles.*

NATIONAL AERONAUTIC ASSOCIATION

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June 6, 1984

The Honorable Dan Glickman
Chairman, Subcommittee on
Transportation, Aviation and
Materials
U.S. House of Representatives
1507 Longworth House Office Building
Washington, DC 20515

Dear Mr. Chairman:

Attached is the National Aeronautic Association statement for the record on your recent hearing on ultralights.

We applaud your initiative in examining this important matter.

Yours sincerely,

Clifton F. vonKann
President

Enclosure

STATEMENT FOR THE RECORD

OF

CLIFTON F. VON KANN

PRESIDENT, NATIONAL AERONAUTIC ASSOCIATION

RE: HEARINGS ON REGULATION OF ULTRALIGHTS

BEFORE THE

SUBCOMMITTEE ON TRANSPORTATION, AVIATION AND MATERIALS

COMMITTEE ON SCIENCE AND TECHNOLOGY

U.S. HOUSE OF REPRESENTATIVES

MAY 29, 1984

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE:

On behalf of the more than 250,000 members of the National Aeronautic Association (NAA), its chapters, divisions and affiliates, I appreciate the opportunity to comment on the question of regulating ultralights. This Subcommittee has made numerous constructive contributions to aviation and I know that its efforts will continue.

By way of background, NAA is the oldest aviation organization in the United States. It was founded as the Aero Club of America in 1905, less than two years after the Wright Brothers' first flight at Kitty Hawk. Both the Wrights were among our members, as were nearly all the great figures who helped make U.S. aviation history from Kitty Hawk in 1903 to the landing on the moon 66 years later.

Throughout its 79 year history, NAA has avoided special interest objectives and has instead maintained one prime purpose: to keep the United States first in air and space flight. With this goal, our members have played important roles in the forward thrust of U.S. aviation over the years.

Now, as to ultralights, NAA has a very definite interest. The Federation Aeronautique Internationale, which we represent in the United States, has organized a microlight subdivision called CIMA (International Committee for Microlight Aircraft). While the FAI definition does not fit that which the FAA applies to ultralights, it nevertheless deals with this type of aircraft -- or air vehicle, as some people call them. Within NAA the responsibilities for administering ultralight matters is handled by the EAA Ultralight Association which was formed several years ago as an autonomous element of the Experimental Aircraft Association. Thus we and EAA are responsible that the U.S. ultralight situation is viable internationally. Naturally, we are interested in seeing this new aviation technology thrive and believe that its future can be an exciting one.

Several witnesses at the May 21, 1984 hearing indicated that the present regulatory arrangement is working. This statement is true in the context of accidents and loss of life -- neither of which appear to be excessive, at least up to now. However, if we consider what will be required to insure the progress of the ultralight movement so that it can fulfill its potential as a viable element of aviation, the status quo looks anything but adequate.

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The few reliable numbers produced on May 21, 1984 indicate that registration is going slowly and that only a small portion of the ultralight population has been registered. This means that there is no data bank adequate to permit insurance companies to assess risk. The insurance available to ultralight operators is therefore extremely limited and very expensive. Inadequate insurance will discourage many potential operators from buying and is already discouraging the financial community from investing in the development and manufacture of ultralights.

In his testimony at the Hearing on May 21, 1984, Mr. Paul Poberezny, President of Experimental Aircraft Association, and one of our great aviation leaders summarized the problems of ultralights in a thoughtful and realistic manner. Mr. Poberezny concluded his testimony with the following comments:

"In order to foster the growth and development of the ultralight movement, we recommend that the FAA should administer programs that will provide:

1. Uniform mandatory registration of all ultralight vehicles that operate within Part 103. This will give the registration procedure the weight of federal authority that may help prevent lower governmental units from exercising unneeded and disruptive control over ultralights.

2. A minimum standard of recognized operator knowledge tested by a simple written exam that will verify a knowledge level sufficient for safe operation within airspace shared by ultralights and other aircraft.

3. Continuation of the policy of no flight physical requirements. Decades of experience with sailplane pilots and some 8 years with ultralight pilots have produced no threat to public safety that would justify the need for a qualifying physical examination.

"Implementing these recommendations will benefit the public, the aviation community, other airspace users, and the ultralight movement.

"The public will be assured that ultralight vehicles are being flown by responsible and knowledgable operators and are identifiable through a federal registration system. They will feel more comfortable with the ultralight environment.

"The aviation community will find ultralights easier to accept and integrate into the airspace shared by all. They will know that ultralight operators have knowledge and understanding of the basic "rules of the air" and that all are operating under consistent guidelines. They may come to realize that the ultralight movement can make a contribution of value to all aviation.

"Ultralight operators will benefit from federal recognition and gain some measure of protection from arbitrary and restrictive regulation by local authorities. They will gain acceptance by other members of the aviation community by demonstrating their knowledge of safe operating procedures. They will benefit from statistical data that will make insurance easier (and perhaps less expensive) to obtain. Dangerous or unsafe procedures, equipment, materials, etc. will be easier to identify and correct. They will gain in their own level of knowledge.

"It is in the public interest that the ultralight movement proceed with minimum government involvement, whether it be federal, state or local. EAA's very simple recommendations will help make this possible. We are asking only that vehicle registration be made mandatory and that registration be accomplished by the FAA -- and that FAA administer a simple written examination (no flight exam) to verify that ultralight operators have sufficient knowledge to operate their vehicles in a safe manner without hazard to the public on the ground or to other users of airspace. Only this, and nothing more.

"We feel that these recommendations will help produce orderly, safe growth within the ultralight movement, and will help preserve the freedom it now enjoys."

NAA fully supports these recommendations and hopes that Administrator Engen will accept them when he reviews the ultralight situation later this year. Further, their adoption would be consistent with the preponderance of viewpoints expressed at the May 21, 1984 hearing.

Mr. Chairman, NAA appreciates your interest in securing a viable future for ultralights.

World's Largest Manufacturer of Ultralight Aircraft

26531 Ynez Road, Temecula, CA 92390, (714) 676-3228, Telex: 499-0565

July 3, 1984

The Honorable Dan Glickman
Chairman, Sub-Committee On Transportation,
Aviation and Materials
Committee On Science and Technology
Rayburn House Building, Suite 2321
Washington, D.C. 20515

Dear Mr. Glickman:

It is my belief, as the largest manufacturer of ultralight vehicles, that there needs to be immediate changes in the ultralight industry. Eipper has sold 7,500 powered ultralights. Our personal safety record has been equal to that of general aviation (one fatality per 45,000 hours flown). These changes are to improve the safety and economic health of this yet new industry.

As you know, there are three categories of self-regulation in the ultralight industry: registration and competency of the pilot; airworthiness standards for the vehicle; registration of the vehicle. I will address these three issues individually.

Registration And Competency Of The Pilot

Mandatory pilot competency, or license, if that terminology is chosen, is very important for the ultralight industry. It will only improve the safety record in the areas of pilot operation of ultralights. Any responsible manufacturer would not sell an individual a vehicle without proper instruction for two reasons, to ensure the pilot can operate his vehicle safely to protect himself and for the protection of other users of the air space.

Airworthiness

Airworthiness Standards are a vital part of the economic health of the ultralight industry. A bad safety record has two major disadvantages, the first being that people will get hurt unnecessarily; secondly, we have proven that by designing and building to an adequate structural design standard, our fatality rate is as good or better than general aviation. The ultralight can be made to be the safest flying vehicle in the world because of their slow speed and low inertia. Builders of un-airworthy ultralights will damage the potential future of those who do build adequate aircraft, thus the entire industry can be destroyed by those builders who do not provide adequate means to ensure that their vehicles are airworthy.

Registration Of The Vehicle

Registration of the vehicle is a program I support in that there will be a system to track the location of vehicles for the distribution of safety material, either for that particular aircraft, or for all ultralight vehicles.

I believe the three foregoing programs need to be industry organized. The industry organizations can better determine the needs of this industry than anyone. To over-regulate and over-burden the ultralight industry would have a damaging effect, in the end eliminating the industry. I feel the best course to take would be industry programs approved by the F.A.A., or Congress, or by some governmental agency. The Air Safety Foundation's regulations for registration of vehicles and competency of pilots and PUMA's Airworthiness Program are totally adequate and should be made mandatory. They have already received F.A.A. recognition.

Aviation is the backbone of this country. America needs a good aviation constituency. The Space Shuttle program, I believe, has done and will do as much for America as any piece of technology we may ever develop. Americans have a dream and desire to fly. This dream should not be only attainable for the wealthy. The ultralight vehicle is the salvation for the struggling general aviation and aircraft market. At this point our foreign sales are 30% of our total output and this number is growing. Foreign countries realize that the ultralight vehicle is going to open up aviation for their countries. The commercial and military uses of the ultralight vehicle are overwhelming. We the manufacturer need your cooperation and support to allow us to be in a competitive position with foreign countries. If we are not careful and expedient they can get the lead on us.

I believe over-regulation is damaging, and under-regulation is also inadequate. We must find the middle-of-the-road and I feel this must be done quickly. The parameters for ultralight vehicles need to be extended relative to weight to improve their safety record and efficiency in manufacturing.

I am looking forward to discussing the details outlined in this letter with you. Thank you for your time.

Yours very truly,

Lyle Byrum
President

fw

Sorrell
AIRCRAFT COMPANY, LTD.

16525 TILLEY RD. SO. TENINO, WASHINGTON 98589 PHONE (206) 264-2666

June 5,1984

Hon. Dan Glickman
Chairman House Sub Committee on Transportation, Aviation and materials
Attention: Scott Crossfield
2321 Ramburn House Office Building
Washington DC 20515

Dear Mr. Crossfield:

Per our telephone conversation of May 29,84 enclosed are some ideas (and frustrations) on the direction of ultralight regulations by the FAA. Also enclosed is a courtesy copy of the complete information pack on our SNS-8 Hiperlight. Also enclosed is a copy of a letter from Mr. Sacrey of the FAA approving our Hiperlight as an Ultralight. We obtained this letter with the aid of Dan Evans of Conressman Bonkers' office. It temporarily "band aids" a Problem described in our letter.

We most definately want to be involved in what ever way possible in developing a workable plan for Ultralight Aviation. As we discussed, we feel there is a need for some guidelines to make the airways safer for all concerned.

We appriciate very much the time you spent discussing the congressional briefing of May 21,84. Feel free to contact us anytime if we can be of any assistance. We want to help; and will gladly elaborate on any points mentioned on our letter.

Sincerely,

Dennis Nichols
General Manager
Sorrell Aircraft Co. LTD

DN /kk

16525 TILLEY RD SO TENINO, WASHINGTON 98589 PHONE (206) 264-2866

Our experience in designing and building "airplane like" ulralights date back over 30 years and many designs of both biplane and monoplane configurations weighing anywhere from 170 lbs. to 340 lbs. empty. All licensed in the experimental category along side our full sized machines.

Sorrell Aircraft Co. became involved in the current ultalight movement less than two years ago with the "discovery" of the outstanding Rotax line of engines. Development of our ultralight, the Hiperlight paralleled the writing of Part 103 and we worked very closely with the Seattle FAA office while at times seeking direction from the FAA in Washington D.C. through the Seattle office in an effort to ensure the Hiperlight's compatibility with the developing regulations.

We have found that safety can in fact be designed into the Ultralight category with the use of aircraft materials and constuction techniques. In actuality, we have developed, by accepted aircraft standards, a certifiable ultralight airframe that meets the weight restrictions of Advisory Circular 103/ Field Directive 8440.28; Ultralight Vehicle Regulations.

We are more than a little miffed at and arbitrary "minor" change made in AC 103.7, Appendix 1; Determining Maximum Level Flight Speeds of Ultralights. Numbers 4 and 5 of step one of the original FD 8440.28 require strut and wire lengths of 3 ft. respectively in order to qualify for drag factors which aid in determining the ultralight speed capability. AC 103.7 requires a minimum strut and wire length of 4 ft., and parallel wires are not counted if they do not diverge uniformly to a minimum separation of at least 8 in.

The reasoning behind this change evades us completely. We can find no ultralight in the industry affected by this change other than our own SNS-8 Hiperlight.

Supposing that the Hiperlight's struts were in fact over 4 ft. and not just over 3 , and our lift wires did in fact diverge, we would be much very suprised if any resulting reduction in the actual airspeed could even be measured! The change does, however, effect the maximum airspeed as calculated for the chart in Appendix 1, pushing the Hiperlight just barely over the "legal" 55 knots. It fits the "original" Part 103 chart at 53.3 knots.

As mentioned before , we designed the Hiperlight specifically for the ultralight category, while working as closely with the FAA as we know how. All to ensure that the Hiperlight would be the best all around performing ultralight possible with optimum structural integrity (safety), and still qualify for the category.

Which bring up another point; safety.

We find the speed restriction of 55 knots, straight and level, full power, somewhat self defeating as it relates to safety. It is obivously an arbitrary figure of questionable origin (or rather we would assume), and defies rational thinking. The problem is made more obvious by the suggested methods of artifically limiting the maximum level flight speeds found in AC 103.7; even to the point of cautioning of the possible hazards that may result from the use of drag inducing or power inhibiting devices!

It is our strong conviction that safety is found in weight limitations and slow landing/stall speeds. Not in arbitrary top speed limitations which literally force manufacturers to use the less desirable drag irducing structures typical of recent hang glider technology. These structures are poorly suited to powered flight. Genuinely safe structures are more easily obtained (and Maintained) using typical aircraft constuction techniques and materials. They offer much greater safety, and can easily be accomplished within the current weight limit of 254 lbs. empty. Ultralight structures can be safer, but their safety goes hand in hand with efficiency and controllability in all conditions. To our amazement, this approach is not "legal" according to either AC 103.7 or FD 8440.28.

Exceedingly fast ultralights are not likely given a strictly observed empty weight limitation and 24 knot stall speed. You simply do not get "dangerously" high speeds working with large wing areas and low weight limits. It is equally difficult to achieve slow stall speeds with high wing loadings typical of fast airplanes without adding high lift devices that add weight and complexity, and not exceed the 254 lb. limit.

High horsepower also means more engine weight and more sophisticated structure to go fast. Again defeated by the weight limitation.

In general, it is our opinion that the stall speed of 24 knots and the maximum empty weight of 254lbs. should be strictly observed because there lies the safety. The top speed limitation is actually detrimental to safety and should be dropped completely, or at least exchanged for a wing loading formula that ensures both the slow stall speed coupled with the maximum empty weight.

We sincerely hope to see the FAA come to grips with the issue rather than continue to parrot input from a few larger ultralight manufacturers. The FAA should not be in the business of "regulating" competition, but should be involved in setting guidelines for genuine safety, far above manipulation.

Ultralight can be safe given the opportunity. Through "unregulated" competition between designers and manufacturers the industry can mature. Public education combined with a much simplified ultralight pilot license and/or ultralightvehicle registration will no doubt improve public acceptance. Motorcycle racing, waterskiing, scuba diving, mountain climbing, four wheel drive rallys, etc., are all incredibly dangerous activities fully accepted by the public, and virtually unregulated. We can see no reason why ultralight

flying should be as dangerous as these sports are to those directly involved or in turn, present any danger at all to those not involved.

A little regulation, perhaps as simple as this state's motorcycle endorsement on drivers license may be adequate with a "rules of the road" written test and a demonstration of ability to ensure operator proficiency. Free competition between manufacturers should be enough to promote much needed continous improvement in ultralight structural design. This alone will soon bring the questionable furniture tube, cable and clothes line technology supported by AC 103.7 to an end. We hope that AC 103.7 is not the feared "give the industry enough rope and it will hang itself" solution to the regulation problem.

The Hiperlight is Sorrell Aircraft Co. LTD's best attempt at offering those with a desire to fly ultralights the opportunity to do so as safely as possible. Constant "minor" adjustments to the regulations make it nearly, if not impossible to work in harmony with the FAA, and we can see no need for such actions beyond petty politics. We hope that the responsible approach on the part of all concerned will soon outweigh all the "snake oil" and sarcasm so far associated with the industry.

Sincerely,

Timothy C Sorrell
Vice President
Sorrell Aircraft Co. LTD

cc: Congressman Don Bonker
Senator Dan Evans
Senator Slade Gorton
Congressman Dan Glickman
Paul H. Poberezny Pres. EAA
John Baker Pres. AOPA
Charlie Schuck
Mike Sacrey
Scott Crossfield

TCS/kak

Sorrell
AIRCRAFT COMPANY, LTD.

16525 TILLEY RD SO TENINO, WASHINGTON 98589 PHONE (206) 264-2866

June 5,1984

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Timothy C. Sorrell
Vice President
Sorrell Aircraft Co. LTD

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TCS/kak

DON FUQUA (Fla.), Chairman

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GEORGE E. BROWN, JR., CALIF.
JAMES H. SCHEUER, N.Y.
RICHARD L. OTTINGER, N.Y.
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TIM LEWIS, FLA.

HAROLD P. HANSON
Executive Director
ROBERT C. KETCHAM
General Counsel
DAVID E. JEFFERY
Minority Staff Director

U.S. HOUSE OF REPRESENTATIVES

COMMITTEE ON SCIENCE AND TECHNOLOGY

SUITE 2321 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, D.C. 20515
(202) 225-6371

May 25, 1984

Hon. Don Engen, Administrator
Federal Aviation Administration
800 Independence Avenue, S.W.
Washington, D. C. 20591

Dear Don:

The hearings held by the House Subcommittee on Transportation, Aviation and Materials on ultralight technology and public safety surfaced some very cogent questions and showed evidence that there is widespread concern about current practice. A rethinking and a thoughtful adjustment to ultralight policy as defined in FAR 103 and its implementation are strongly indicated. As examples of specific concern, I submit that there seems to be a need for:

1. Ultralight pilot training and licensing for their own safety in operating their aircraft and to assure that they have sufficient knowledge of air traffic procedures.

2. Ultralight aircraft aerodynamic, flying qualities, material, and structural standards in the interest of operational and public safety; and

3. Ultralight aircraft registration by Federal authority to assure the public that governmental responsibility is being exercised.

I understand your desire to gather more statistical support for decisions in this area but I believe that we would be remiss if we waited until those statistics were tragic.

Since there is a strong tide in favor of more effective FAA participation, it would be best if the FAA took the initiative. If not, Congressional action will certainly be necessary in the near future.

Your comments and response are seriously requested with the sincere hope that both freedom of flight and the public's safety can be protected.

Sincerely,

Dan Glickman

Dan Glickman, Chairman
Subcommittee on Transportation,
Aviation and Materials

DG/Twm

U.S. Department of Transportation
Federal Aviation Administration

Office of the Administrator

800 Independence Ave., S.W.
Washington, D.C. 20591

June 8, 1984

Honorable Dan Glickman
Chairman, Subcommittee on
Transportation, Aviation and Materials
Committee on Science and Technology
Washington, D.C. 20515

Dear Dan:

Thank you for your letter of May 25 concerning the hearing that you conducted on ultralight technology and public safety. I was pleased and privileged to express the views of the FAA. I agree with you that the testimony given by those present indicated divergent views concerning ultralight operation and regulation as defined in FAR Part 103. I am most interested in and concerned about training, licensing, and manufacturing standards in the ultralight community, particularly as they affect the public.

As I testified, the establishment of FAR Part 103 set two years as a review point with regard to efficacy of the regulations. We are one flying season into that period. The second summer season for flying is just beginning. The FAA has participated actively on a daily basis in monitoring the sport of ultralight flying. During the last 18 months, there have been 146 ultralight accidents involving a death or serious injury. With about 15,000 ultralight vehicles in operation, that rate is comparable to that experienced in general aviation. Although each accident is of concern and our goal is to have no accidents, the accident rate is not unusual.

The Administrative Procedure Act and sound policy formulation require the FAA to show cause, provide deliberative reasoning, and allow public comment before changing regulations with respect to aircraft/vehicle operation. I take this charge seriously, as I know that you intend that I do. I have set in motion the review process that we planned when Part 103 was established and that you have requested. That process will culminate in public comment and hearings in the month of the second anniversary of the establishment of Part 103, October 1984. By this second anniversary date, all organizations and individuals interested in ultralight operations should have sufficient experience to provide a meaningful review of ultralight operations under FAR Part 103. If we were not to wait until the end of the upcoming summer season to undertake this review, it would be based on a much lower level of experience.

I look forward to providing an open forum for review of FAR Part 103 to all those who are interested in ultralights, with a view toward protecting freedom of flight and public safety. We will seek maximum participation of all concerned and will adddress all of those areas of possible inquiry we highlighted at the House Committee on Science and Technology hearing. I want to be responsive to your desires and will move promptly to implement any changes that are indicated as a result of our review. I will keep you informed.

Sincerely,

Donald D. Engen
Administrator

○